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**The Place of the Medical Colleges in the National Defense\***

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The subject assigned me is one of paramount interest, not only to the Army and the medical colleges, but also to the medical profession throughout the country, and has a direct bearing on the welfare of the nation as a whole.

Perhaps it would be well for me to tell you what the Army requires in the way of medical personnel. During this discussion I shall refer only to physicians and will not consider the need for dentists, veterinarians, sanitary and administrative officers, nurses and enlisted men. All these individuals make up the Medical Department, of which the Medical Corps is only a part.

When the Armistice was signed November 11, 1918, there were 31,501 Medical Corps officers in the Army. The Army numbered at that time 3,673,888 men. The present so-called training program calls for an Army of approximately one and one-half million, and requires about 13,000 medical officers. The regular Medical Corps consists of 1,250 officers; the National Guard brought about 1,200 medical officers into the Federal service, leaving about 10,500 vacancies to be filled by medical reserve officers. On October 10, 1941, there were approximately 9,076 reserve medical officers on extended active duty, leaving a shortage of between 1,500 and 2,000.

When the ratio of medical officers to total strength is estimated, it would seem that the Army, even with the present shortage, is much better supplied than most civil communities. The medical officer, however, has varied duties to perform in the modern army. Let me describe some of them briefly.

1. *Professional Medical Service.*—This service must be available for the entire Army and, in many instances, for civilian employees on duty with the Army. These services are furnished at induction stations, in dispensaries and in hospitals, both within the continental limits of the United States and in overseas garrisons. The hospitalization program of the Army, for the care of non-battle casualties, at present utilizes 100,278 beds, of which 16,217 are in fifteen general hospitals.

\*Read at the Fifty-second Annual Meeting of the Association of American Medical Colleges, held in Richmond, Va., October 27-29, 1941.

2. *Medical Administration.*—Administrative medical service is carried on at all headquarters and necessitates the diversion of professionally qualified medical men from hospitals for duty in the War Department, in Corps Area and Department Headquarters and Medical Supply Depots. These administrative duties include all personnel procedures: vital statistics, reports and returns; supervision of training; hospital construction; inspection; professional services, preventive medicine; finance and supply, and a number of others.

3. *Training.*—Civilian physicians are apt to think of military duty only in terms of medical service to the armed forces. It must be borne in mind, however, that the Congressional Act authorizing the present military program is a Training and Service Act. Just as infantry, engineer or signal units, so officers of the Medical Department have the responsibility of training enlisted men of the Medical Department for similar assignments.

The authorized enlisted strength, Medical Department, for the current program is about 112,000. Intensive training of this personnel is conducted in the following installations and units: Medical Replacement Training Centers, Training Units, Schools for Enlisted Technicians and an Officer Candidate School for Medical Administrative Corps Reserve. This training, being a responsibility of the Surgeon General, is conducted by officers of the Medical Department.

The foregoing gives you, briefly, the needs of the present Army. If the forces are enlarged, the need will be greater, and if they are reduced, the need, of course, will be diminished.

Naturally, we look toward the medical schools of the country to help us with our program, and I know, from my contact with the representatives of many of them, that they are willing to do all in their power to help us.

Several suggestions have been made, and I have heard them discussed informally. The first was to increase the enrollment of the medical schools throughout the country. When any thought is given to this it is soon realized that any such increase is limited as it is physically impossible to take care of more than five to ten per cent increase in any institution. The effect of such an increase will not be felt by the Army or by the country until after the physician has finished, at least, a one year internship, or until June, 1946.

Another proposal has been made in the medical press to do away with summer vacations and accelerate the output of physicians. This plan also will not furnish any increase in physicians for several years. If we could look ahead far enough, we might be able to do some long time planning. Unfortunately, we can only guess what the future holds for us. We know, however, that present day conditions cannot last indefinitely and with an increase in the tempo of graduation and a reduction in the size of the Army, the civil communities will have to absorb a large number of physicians over a relatively short period of time.

In order to make a fair basis of estimate you may ask "Just how many doctors does the Army want each year?" It is difficult to answer this question,

for obvious reasons. First, our requirements are predicated on total strength. Second, we do not know how many officers want to remain in the service after serving for one year. From returns at present, it would appear that more than two-thirds of those now on duty desire to remain rather than return to civil life and be recalled at a later date. If this is true, then at our present strength we would need a maximum of 3,200 replacements each year to allow those who so desire to return to civil life. This would not mean that the 3,200 would come from any one class but they would be spread over the graduating classes of a number of years.

The Surgeon General is vitally interested in the education of the doctor and feels that not only is it for the best interests of the individual to continue his medical education without interruption, but it is also an advantage to the Army. If the young man discharges his obligation as a selectee prior to graduation, he is no longer available as a medical officer unless he sees fit to volunteer.

At the present time Selective Service, through its 6,000 local boards, defers bona fide medical students during their first two years. During the third and fourth years the student may apply for a commission in either the Army or Navy Reserve and be placed in a pool so that he will not be called until after he has graduated and completed at least a one year internship. I strongly advise the Deans to encourage the enrollment of all physically qualified third and fourth year men.

At the present time, we have 70 per cent of our Medical Reserve on active duty. The question arises then, "Why not secure the additional officers from the uncalled 30 per cent?" The answer is that among this 30 per cent are 1,500 interns who will not be eligible until July 1, 1942. Then, there are a few residents who are being permitted to complete their last year of residency. Physicians of the Veterans Administration, Indian Service, Federal Security Agency, physicians in key positions in state, county and municipal health agencies, essential medical school faculty members and physicians in certain rural communities complete the list.

The lowering of the Selective Service age from 36 to 28 was followed by the declination of appointment, or withdrawal of applications already submitted, by more than 150 physicians.

As to any changes in the curriculum to aid National Defense, I have very little to suggest as I do not feel that I am competent to give this advice. Some of the young medical officers who come to us are somewhat short on what might be called "horse and buggy" surgery. They know techniques of intricate surgical operations but are at a loss when it comes to the much more simple traumatic surgery. In this present day of motorization and mechanization there is great need for a knowledge of emergency traumatic surgery.

Then, too, the young officer knows little of Ward Administration. Too much has been taken for granted in his hospital training. He knows nothing about the procuring and economical use of supplies. He does not investigate to

see that his patients receive the proper dietary regimen, and whether the food is well served and adequate in quantity. Some physicians have very little interest in the preparation and care of records, these being of vital importance both to the Government and to the individual. All these things have to be supervised by the Army physician.

The young physician who has had a year's military service will find that when he returns to civil life he will have been benefited immeasurably, even if he has had to serve with a tactical unit. It may be true that he has been taken away from work in a favored medical specialty but he has gained a much broader perspective which he can utilize to advantage in the years to come.

Some suggestions have been made that "military medicine" or "medico-military administration" be taught in the senior year. This might be done, provided a suitable instructor is available; however, with the crowded course given the fourth year medical student, it had better be approached with caution.

R.O.T.C. units exist in only a small number of medical schools and the instruction is largely along the line of medical tactics. The training is excellent but, unfortunately, available to relatively few.

Most all of you are interested in what are called "Affiliated Units," as many of these are connected with teaching institutions. These units will not be called out as such until the present emergency becomes more acute. Many individual officers are already on duty but they will join the unit to which they are assigned as soon as it is mobilized. Some of these units are in a much better state of organization than others. A few will probably have to be withdrawn and assigned elsewhere. Care should be exercised in the formation of medical staffs, however, as when the call comes the entire staff will go and there should be enough to remain so as not to cripple the institution.

The present day evaluation of a specialist is far different from what it was twenty or twenty-five years ago. Records now exist showing training, membership in special societies, diplomates of various boards, etc., so that a fair estimate can be made in the average case. During the last War, the doctor's statement was all we had in most cases and this was strongly flavored by wishfulness in many instances.

From what I have said concerning the multitudinous duties of a medical officer, you can see that it is difficult to assign all officers to duties similar to their peacetime occupation in the medical specialties. A sincere effort is being made, however, to comply with their wishes whenever possible.

Medical education is on a higher plane in this country than was thought possible a few decades ago. The Army knows that you are going to continue on this high level and that you will show the fine spirit of cooperation that you have shown in the past. The Medical Corps is made up of men you have trained. Achievements of individuals bring credit to the entire profession and unprofessional conduct of any member casts a shadow on all of us. We hope that we can work together for the common good and with only a single goal in view.



## DISCUSSION

DR. WILBURT C. DAVISON (Duke University School of Medicine): I wish to thank Colonel Lull for his splendid presentation. In urging medical students and graduates to apply for commissions, I have found that four reasons are responsible for a lack of enthusiasm. If this feeling is general, the Army may have difficulty in securing a sufficient number of medical officers, and the medical profession may be blamed because of the shortage, though physicians are no more subject to army service than the members of any other profession.

(1) Belief that they will be assigned to work in which they are untrained and uninterested. Could a plan, similar to that introduced by General Merritte W. Ireland in the last war, be used and eminent physicians and surgeons be appointed as Chief Consultants in the various specialties so that each reserve medical officer would feel that some one understood his problem?

(2) Boredom due to inactivity because the present number of medical officers is at battle strength. Why should eight physicians be assigned to regiments of from 1,500 to 2,000 men during this training period, when two could easily do the work?

(3) The feeling that active duty will be prolonged indefinitely even though hostilities have not commenced. Could active duty for reserve medical officers be on a definite term during the training period as was originally planned?

(4) Delay in issuing commissions. Is it necessary to wait three months for a commission?

COLONEL GEORGE F. LULL (U. S. Army Medical Corps): I might start by answering the last question first. The fact that it takes such a long time to get a medical student commissioned is deplored. It is the matter of the old Army routine that he has to go through. It is still on a peacetime basis. His application has to go through the Military Area, the Corps Area, and on up to the War Department, and those things are considered in many of the Military Areas of secondary importance. The officer in charge of the Military Area may be called away on military maneuvers, or he is doing other things, and it is passed up for months. It is regrettable that it cannot be accelerated, and steps have been taken recently to try to get the War Department to accept the Corps Area commission without having these applications go on up. The staff, however, would not approve that.

As to why it necessary to have more than two men with an infantry regiment, in the first place, as I said, this is a training program. If this infantry regiment, say the 1st Infantry, goes to the theater of operation and into the front line tomorrow, it will need all of the eight medical officers, and it wants men who know something about the regiment. If we wait and have only two officers there now, and when we move up throw six green ones in, as we did in many cases in the last war, the mortality rate in the regiment is going to be appreciably higher.

As far as the appointment of consultants is concerned, this is under consideration at the present time. We have in the office a Section of Professional Services, and these people are in contact with eminent men in civil life at all times, but these men have not been called to active duty, and many of them feel they should not be called at this time as they can render a valuable service without actually being called to duty.

There is a definite length of service now; that is, two years and a half. The first bill Congress passed said they were to be called for one year, and this was lengthened one year and six months, making two years and one-half. Our hope was that any medical officer who desired to return to civil life at the end of a year could do so and another would be brought in. Unfortunately, we have no others to bring in, hence the boys are out of luck and they have to stay the two years and one-half, at least.

DR. E. J. CAREY (Marquette University School of Medicine): I would like to ask Colonel Lull a question, and it has to do with some of this confusion on the part of medical students about this second lieutenantancy in the Medical Administrative Corps. Unfortunately, there has not been a clear-cut presentation of this problem to the medical students. Last April and May there was one presentation, and then during the early part of this month another one. Now, what was said orally to these students in the auditorium was not incorporated in the paper that was presented to them to sign; and I think they could avoid a great deal of this misapprehension, misconstruction and misinterpretation, especially where the charge has been made now that there is disloyalty on the part of medical students.

I would like to say very positively that that is not true. It has been predominantly due to a confusion in what has been presented to the students, and the papers that were presented to them to sign. I want to cite this one example of that. About two weeks ago it was presented to our senior students again to apply for this second lieutenantancy in the Medical Administrative Corps. It was stated very definitely that if they did so, they would be put in this reserve pool, and that the object was for them to stay in this pool until the internship was completed. In the paper that was handed them to sign, there was a waiver placed in there, waiving away all rights, and they would be expected, in case of any particular call, immediately to join the active forces for a minimum of one year; and it also waived away many other rights that regular-line officers, lieutenants and captains, have in the Reserve Corps during this particular emergency. If it were simply stated right in there as to what was the real object of the Surgeon General, I think these students would willingly join this second lieutenantancy in the Medical Administrative Corps and there wouldn't be the confusion we have at the present time.

COLONEL LULL: When the ruling was rendered that third and fourth year medical students could join the Medical Administrative Corps Reserve, it was decided to place them in a pool and not call them for any duty until after the completion of one year's internship. That ruling still stands. Any third or fourth year medical student who signs up for the Medical Administrative Corps Reserve will not be called to duty until after his year's internship. He will not have to fool with the Draft Board at all. He is out of that, then. He is then under the War Department.

He signs an agreement that he will serve for five years, and he agrees that under ordinary circumstances (this was inserted, I believe), he will not claim exemption from service when called. We had to go to the War Department with clean hands. We cannot go to the War Department and say, "We want medical students exempted just for the sake of their being medical students." We have to tell them the reason. We want them exempt so that at the end of their internship they will do their year of military service. Therefore, the Public Resolution as it stands now says that any lieutenant with dependents who produces two affidavits that they need his support, that he is in such a financial state that he cannot support his dependents, is allowed to resign. There are not many medical students who pass from their hospital internships to a first lieutenantancy

in the Army where they get between \$200 and \$300 a month, who can sign such a statement and can have it supported by affidavits. Of course, you can always get an affidavit from someone on anything, but I do not believe any of them can rightly resign.

Some of them objected to that. They were looking ahead and they said, "Something might come up that I would want to resign." We are not protecting the medical student just to finish his education and hospital training. We are selfish enough to protect him because we need him when he is finished, and he is going to get that protection.

There is one thing in there: When he signs up for five years, as soon as he finishes his medical education he can translate his commission as second lieutenant in the Medical Administrative Corps Reserve to a first lieutenant's commission in the Medical Reserve Corps and he will still be exempt until he finishes his internship, but he will be liable to call for a period; if he starts in his junior year, he will be liable to call two years after he has finished that internship.

DR. CAREY: If that were put down so these boys could read it, they would sign it.

COLONEL LULL: We have difficulty, you know, in getting things out in English, because it goes out one way and the corps area fills it up with what has been referred to as "weasel words."

DR. H. S. DIEHL (University of Minnesota Medical School): I do not want to prolong this discussion, in spite of the fact that this is a subject in which we are all vitally interested, but I do want to say just a word as a member of the Medical Preparedness Committee of your Association. Dr. Rappleye is Chairman of that Committee, and he is not here, so I think I should call your attention, in connection with Colonel Lull's remarks, to the report of the Preparedness Committee which was available on the registration desk this morning. That summarizes many meetings and discussions that we had in Washington with the various authorities in regard to the need for medical officers and the steps that should be taken to meet those needs.

That report and the recommendations of the Committee were presented to the Executive Council on Saturday and are being presented to the executive session on Wednesday afternoon. I think if you will read that report, you will find many of these problems presented and discussed. It was given out to you in advance so that you could consider it before the executive session on Wednesday afternoon.

The Medical Preparedness Committee of this Association, in its contacts and meetings in Washington, has had the very best of cooperation and splendid support from the Surgeons General of the Army and the Navy, and the officials of Selective Service. It has been exceedingly gratifying to note the understanding spirit that has developed in meeting these problems.

DR. HOWARD C. NAFFZIGER (University of California Medical School): I should like to make an inquiry of Colonel Lull. I understand that of about 5,200 medical graduates each year, only 3,200 or so, are physically qualified for service, the remaining 2,000, including women graduates, amounting to perhaps 300 and 1,700 men who are not up to the physical standard required by the Army and Navy.

Discussion in the medical schools has been concerned with increasing the number of medical graduates by enlarging the enrolment and, also in condensing, in one way or another, the period of instruction. Would it not be well to see that the physical require-

ments for admission to medical school are raised? The results of this, of course, would not be seen for some four or five years. Such action would give us a larger pool of available men for service without increasing the total of graduates. For our peace time needs no increase is needed and we will have difficulty and an economic problem in absorbing an increased number of practitioners when the emergency is passed.

I believe it would be unwise to make the physical requirements such that exceptional students with some mild defect or women students would be barred. Nevertheless, it would be perfectly feasible to give such weight to the physical requirements as to affect the large number that go to make up the main body of students. It is my suggestion that the medical schools raise their physical requirements and I should like to ask Colonel Lull if this would not, in the course of time, materially improve the present situation?

DR. C. H. BEECHER (University of Vermont College of Medicine): I would like to ask Colonel Lull what the War Department is going to do to help us in schools that have R.O.T.C. units, of which there are twenty-three, to maintain our R.O.T.C. units with this scheme of commissioning all eligible students at the end of their second year. We are disturbed because we think it is going to disrupt the R.O.T.C. units.

COLONEL LULL: That question has arisen on several occasions. However, the War Department feels that the man who is admitted to an R.O.T.C. unit has certain advantages over the man who simply takes his commission at the end of his course. In the first place, the R.O.T.C. student gets a certain amount of training. The summer training is especially valuable. He gets a small amount of cigarette money during the course, and when he is commissioned, he has the edge on the man who has not had the R.O.T.C. course because he knows a little about medical tactics, and we feel that he has gained this advantage. It also helps him in promotion.

It is too bad that we have not more R.O.T.C. units so that we can take in only R.O.T.C. graduates, but our need is so great that we cannot limit it to graduates of the R.O.T.C.

## Four Academic Years in Three Calendar Years\*

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On May 2, 1941, the National Headquarters of the Selective Service System issued memorandum I-91 to all state directors, reporting that "there is an overall and increasing national shortage of medical doctors for service both to the armed forces and the civilian population." (Figures supporting this conclusion were cited.)

In view of these data, on May 30, 1941, the Executive Council of the Association of American Medical Colleges recommended to the medical schools of the United States:

1. That those schools which can do so, without lowering standards of medical education, increase the enrollment of the 1941 entering class by 10 per cent.
2. That every medical college which can do so, without lowering the standards of medical education, is urged to continue the required medical training of the fourth year during the summer of 1941 in order to graduate at an earlier date as many students as possible.
3. That the Association make a study of the need for and the possibility of revising the schedule of instruction in medical colleges with a view to accelerating the output of graduates during the national emergency without any lowering of standards of medical education.

With regard to recommendation 1 (increasing the freshman enrollment), the American Medical Association reported<sup>1</sup> the following in its educational number: "Forty-four medical schools have increased the enrollment of the 1941 entering class by a total of 329 students," (which constitutes a 5.6 per cent increase over the 5,900 freshmen of last year). "It is anticipated that the sophomore enrollment will be increased 40, juniors 131, and seniors 79."

With respect to recommendation 2 (operating summer sessions for seniors), the American Medical Association report states: "Eleven schools have made it possible for students to anticipate, during the current (1941) summer, a part of the required work of the fourth year. In three of these schools the program is required. Classes will be graduated in February or March by eight schools."

The present paper deals with recommendation 3 (possible acceleration of output of medical students), and, more specifically, with the possibility of effecting this through the operation of summer classes. Stated simply, the problem is—instead of conducting classes eight months of the year for four years (total,

\*Read at the Fifty-second Annual Meeting of the Association of American Medical Colleges, held in Richmond, Va., October 27-29, 1941.

1. J.A.M.A. 117:688 (1941).



32 months) could we not conduct classes eleven months of the year for three years (total 33 months), thereby increasing the output of graduates by 33 per cent?

It seemed desirable to discover what is already being done in this direction. To this end, questionnaires were sent to the 66<sup>2</sup> four year schools. Sixty-three medical colleges responded, indicating the widespread interest in the problem. Figure 1 summarizes the data on summer sessions. Thirty-five schools offer summer clinical instruction, and 18 offer preclinical instruction. In 12 schools summer work enables the student to graduate earlier and in 10 schools some

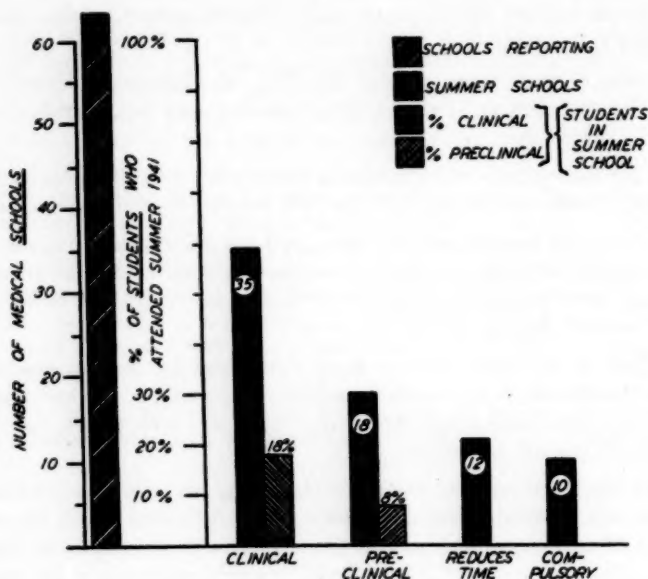


Fig. 1. Attendance of medical students in Summer Sessions.  
See discussion in text.

summer attendance is compulsory. These figures are deceptive, because a relatively small proportion of students is affected. Only 18 per cent of all clinical students and 8 per cent of all preclinical students in the 63 schools reporting receive some summer instruction.

That more than one-half of the medical schools of the country offer summer clinical work is probably because patients come in and clinical staffs are in attendance and accustomed to function twelve months of the year. It would seem that the possibilities for inauguration or extension of summer clinical work should be explored by every school.

2. Rush Medical College, which will discontinue undergraduate medical instruction in June, 1942, is not included in the tabulations.

The more important objections to the four quarter three year course (i.e., increases in teaching load and in faculty and funds required) probably apply mainly to preclinical summer instruction, which is now given to 8 per cent of all preclinical students in less than one-third of our schools. Perhaps, the faculty and student tradition of the long summer vacation in academic institutions generally is also a factor.

In about one-fifth of the schools, summer work enables some students to complete their academic training in less than the usual 45 calendar months. In most instances, the reduction in time is three months, and only rarely as much as six months. State laws requiring the distribution of instruction over a minimum number of calendar months or years prohibit greater reductions, and would probably require modification for the institution of a three year medical school curriculum, unless an executive order could be issued by the President, under the emergency powers granted him, and be put into operation for the duration of the emergency.

Quite apart from the present emergency, it would seem desirable to change the state minimum residence requirements to permit schools now operating four quarters of the year to graduate a student who attends summer sessions when he completes the prescribed academic work. At present, such students may have to remain in school and take elective work until the time limit is reached. Some schools permit students to complete their academic work in less than the minimum time, and award the M.D. degree after the minimum has been reached, while the student is interning. Such students must then take more than a year's internship, or a residency, in states requiring one year of internship for licensure.

The feasibility of amending the state residence laws has often been discussed. A serious bar to such efforts has been the fear that the desired amendment might carry undesirable riders favorable to cults and other unqualified groups seeking to practice medicine. This whole problem should be reconsidered in the light of the present national emergency.

In ten schools, attendance by all or part of the class is compulsory for one or more summer sessions. The purpose of this requirement is usually to provide additional training (e.g., an extra summer of clinical work is required) or to stagger the attendance of students throughout the calendar year (e.g., three-fourths of all clinical students must attend each quarter, including summers; one-fourth must remain out of school each quarter). One school is requiring attendance of all students every summer, for the purpose of graduating students in three years, in the interests of national defense.

It would be instructive to hear from representatives of schools with compulsory summer attendance, since it is so generally believed that this works a great hardship on the student. This summer at the University of Chicago we required three-fourths of our juniors to remain in residence in order to stagger the attendance in the clinical year<sup>3</sup>. It was a distinct surprise to me that I encoun-

3. A number of these juniors will graduate early.

tered so little student resistance to this plan. However, compulsory summer residence to stagger attendance throughout the year possesses these two important features which facilitate administration of the plan:

(1) The one-fourth of the class which may remain out of residence can consist of those students on whom attendance would work the greatest hardship (or those students who are most persistent, perhaps); and (2) students are still left with a free quarter in which they may get a job, which is less difficult now than formerly.

With regard to the compulsory attendance of all students, one colleague states: "With our summer quarter more than two-thirds over, we have been unable to find that it has caused undue hardship on any member of the faculty or student body . . . The quality of work done by both faculty and students has been well up to par."

Only a few of the sixty-three reporting schools stated that a three year program utilizing the summer quarter would be feasible without drastic curriculum changes or excessive budgetary and instructional demands. Almost all felt that one or more serious, if not insurmountable, obstacles barred the way. The following objections were stressed:

1. There would be an increased teaching load for existing staffs. In most instances, the replies indicated a willingness of faculties to sacrifice vacation time or summer research, provided the need seemed to warrant it, and other difficulties of the plan could be met.

2. In some instances an augmented teaching staff would be required. The magnitude of this need would depend, in part, on the extent to which existing staffs could distribute their teaching over the four quarters of the year. In part, the problem is one of finding adequate teachers, but, in the main, it is financial.

3. A three year curriculum would require additional funds for increasing staffs, laboratory supplies and other costs of instruction. This appears to be the most important difficulty. Few schools are financially able to embark on any program, no matter how important, if increased expenditures are involved. Most schools are barely able to carry a normal financial load. Since the emergency is national, since the national government is concerned about the actual or threatened shortage of physicians, it may even be necessary for the national government to afford financial assistance to the medical colleges in any attempt they may make to fill the shortage.

4. It is claimed that the student might be affected adversely financially, physically, educationally. That many students might suffer financial hardship is admitted, and any plan for financing the medical schools in a three year program must include measures for financing students, possibly by loans. Adverse physical effects of summer school seem not to have been demonstrated conclusively. (There are others in this group more competent to discuss this problem, notably Dr. Diehl, to whom, and his colleagues, we owe a great debt for making institutional authorities everywhere acutely conscious of the tuberculosis problem.)

I can speak with more conviction about the alleged educational value of a summer spent at some job which, though remunerative, bears no direct relationship to the student's academic interests. Experience with students at the University of Chicago—undergraduate, graduate and medical—leads me to believe that there is little, if anything, educational to be gained by a student from spending a summer in a mill, factory, farm or office. Any summer job which yields an appreciable income leaves little time or energy for reflection on biological principles or "digestion" of medical courses.

5. A three year plan would require a revision of the curriculum in a number of schools. The quarter system, in which the academic year is divided into three quarters instead of two semesters, permits the utilization of the summer quarter as an additional unit of instruction equivalent to the other time units of the year.

At Chicago, the autumn quarter runs from about October 1st to Christmas. The winter quarter lasts until the middle of March. The spring quarter continues until early June. The summer quarter operates from mid June until the end of August. Each of the four quarters normally lasts eleven weeks; each is an instructional unit equivalent to the others; each is followed by a week's vacation and there are no classes in September. This allows the student more vacation time than he will have as an intern or practicing physician.

Instruction in the clinical years consists of six externships, each of which is offered every quarter, including summer. The three externships of the junior year or of the senior year may be taken in any order.

Many, but not all, courses in preclinical subjects are offered twice a year. The course offerings are planned to enable a student to proceed rapidly by attending summers, or to pursue an irregular program involving research or other elective work. Most members of the faculty have one vacation quarter. These vacations are staggered throughout the four quarters.

The quarter system lends itself admirably to a "four academic years in three calendar years" program. At the University of Chicago, this system has been in operation for undergraduates and graduates since the University was founded 50 years ago. President Harper felt that failure to utilize the summer for instruction involved a great waste of plant facilities. This concept is especially applicable, it would seem, in the clinical instruction of medical students; without utilization of the summer quarter, one-fourth of the clinical material in teaching hospitals is wasted for undergraduate instruction. It is significant that four medical schools now require a staggering of student attendance in the clinical years for the express purpose of capitalizing on the hitherto little used clinical resources afforded by patients entering teaching hospitals in the summer. This is a development worthy of serious consideration by every medical school, entirely independently of the present emergency.

6. The limited supply of high grade premedical students is also an important factor. Should we graduate 33 per cent more students than we now train, we should need just that many more high grade applicants. The problem is not fully

as serious as this statement suggests. Although only six medical schools currently require four premedical years or a degree for admission, approximately two-thirds of the students admitted to our medical schools have spent four years in premedical work. Were it possible to admit after three years of premedical work, exactly those students whom we now select, the problem of supply in the immediate future would be eased considerably. Admittedly, the quality of the student's fourth year of premedical work may often be a determining factor in his admission to a medical school. Yet I doubt whether the quality of our medical student body would be appreciably affected if we were all forced to form our judgments about admitting a student after three years of premedical work in every case.

TABLE 1. Possible schedule of work for students commencing summer, 1942, leading to the graduation of an extra 5,000 students in 3 years

	1942-43				1943-44				1944-45			
Students' rank in June, 1942	Quarters				Quarters				Quarters			
	Su.	Aut.	W.	Sp.	Su.	Aut.	W.	Sp.	Su.	Aut.	W.	Sp.
finished junior year	senior work				(new class)							
finished sophomore year	junior work				senior work				(new class)			
finished freshman year	soph. work				junior work				senior work			
admitted to medical school	fresh. work				soph. work				junior work			
graduates (in thousands)			5			5			5			5

It should also be remembered that medicine is in an especially favored situation among professions, in that there are twice as many applicants for training, as there are places in our schools.

If the medical schools felt the emergency warranted, and if the financial and other facilities were made available, the population of young physicians in the country could be increased by about 5,000 in three years with no increase in the number of students admitted. Table 1 indicates a possible schedule which would graduate 20,000 students (5,000 every 9 months) in 3 years, while admitting only 15,000 (5,000 every 12 months). By that time, the emergency will probably either have passed, in which case a readjustment to the present four year program would be relatively easy, or it may have become stabilized or,



perhaps, even increased, in which case far more drastic measures than we now contemplate may be necessary. We may find (in the words of one of our deans) "that the problem is not one of the most desirable training, but the best possible training in an emergency."

#### CONCLUSIONS

1. A serious shortage of physicians available to the armed and civilian populations of the country is a possibility to be considered seriously.

2. It is the responsibility of the medical schools to formulate procedures which give promise of meeting the probable needs of the emergency.

3. Each school should explore thoroughly the possibility of graduating students in less than four years, even if there is no immediate annual increase in admissions.

4. In the clinical years, the opportunities for conducting summer classes are probably more favorable than in preclinical instruction.

5. The Association of American Medical Colleges or the member medical colleges should be in a position to state what financial assistance is required by them and their students should the immediate acceleration of medical training seem imperative, and should federal aid for the program be made available.

6. The hardships of compulsory summer attendance on students are probably exaggerated in many cases.

7. Even if there were no emergency, it would be desirable to amend the state laws so that a student could receive his degree when he finishes the prescribed academic work of the school, even if he is enrolled in the school for only 36 calendar months.

8. Even if there were no emergency, compulsory attendance of some clinical students in summer, as part of a plan for staggering attendance in clinical classes throughout the year, deserves the consideration of those schools seeking the maximal educational returns from the clinical resources available in their teaching hospitals.

## Four Academic Years in Three Calendar Years\*

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On being confronted with the possible necessity of producing more medical graduates, a study was made to discover how this could best be accomplished. Any plan, it was decided, should conform to the following criteria:

1. It should not involve any lowering of present standards, either in the quality or quantity of instruction.
2. It should be so adapted to the present curriculum that the changeover could be made with the least possible confusion, and should permit an equally easy return.
3. It should take account of the fact that expansion of resources and equipment may be difficult, and that many members of the teaching staff may be called to other duties.
4. It should produce the increased number of graduates at the earliest possible moment.
5. The medical student during his course is, from the point of view of usefulness to the nation, out of circulation, so to speak, and the time thus spent should be as short as possible.

Before considering various plans it will thus be necessary to outline, briefly, the present curriculum. The program now in effect in the Duke University School of Medicine permits students to finish the medical course of twelve quarters in three calendar years and three months. To get through in that time, the clinical work must be started in the summer following the second year, continued through a second summer and completed in the Autumn Quarter of the third calendar year. The clinical curriculum is so arranged that every subject is taught in each of the four quarters and students are permitted to take the three junior and the three senior quarters in any order. Thus a student in his third or fourth year may drop out for any period of three months which he may select and, on his return, pick up where he left off. No compulsion has been exerted toward thus shortening the elapsed time for the medical course, but of 374 students graduated from 1932 to 1940, 56 per cent have gone through in less than four academic years. Twenty per cent have finished in the minimum time of three and one quarter years. The others have taken longer, largely because of their failure to take advantage of the first summer quarter available

\*Read at the Fifty-second Annual Meeting of the Association of American Medical Colleges, held in Richmond, Va., October 27-29, 1941.

to them. Several have chosen not to register for certain other quarters in order to do some special work (research, substituting as interns, etc.). The plan is as flexible as it can be without involving repetition of the so-called preclinical courses within the year, and offers many advantages. Its chief disadvantage is that the clinical quarters are not evenly loaded, there being more students in some quarters than in others. On the other hand, since students participate as an integral part of the hospital ward routine, the alternative plan of having no teaching in the

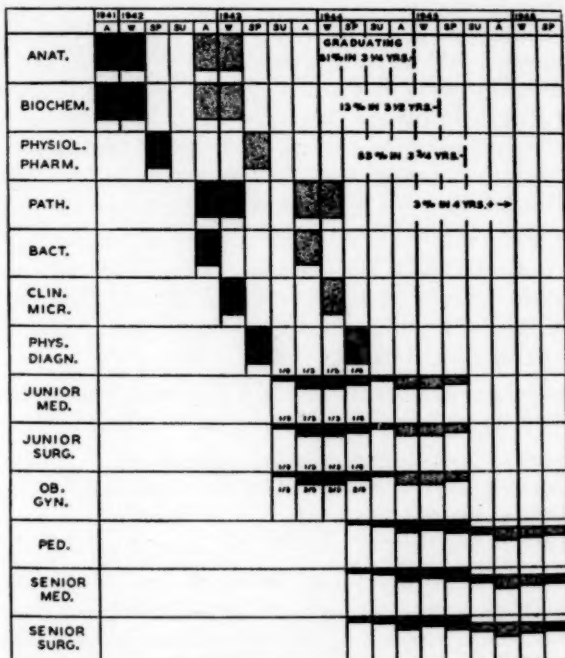


Fig. 1. Diagram of distribution of students at present with yearly admissions and a discontinuous sequence of clinical quarters permitted. A=Autumn, W=Winter, SP=Spring, SU=Summer. The figures at the upper right show the general current trend of the time taken for graduation, depending chiefly on continuity or discontinuity of attendance on the clinical quarters. (See text for further description.)

summer is even less desirable, and in effect unbalances the load still further. Even with that slight drawback, the curriculum has functioned well and both students and staff are pleased with it.

Figure 1 shows graphically how the students who enter in two consecutive years would be distributed during their course and how they would be graduated under the present plan. Each entering group is represented by a different symbol and the size of the class or the part thereof in any given quarter is indicated by

the length of the vertical side of the rectangle. Progression in time is shown from left to right; progression in course is shown vertically. No attempt has been made to list every course given nor to indicate the actual hours devoted to any subject within the limits of a quarter. For example, anatomy and biochemistry are each shown as being taught in both the first and second quarters. Actually, most of the hours in the first quarter are devoted to anatomy; in the second quarter the time is divided almost equally between them. In the clinical quarters, the average distribution of students for the last four or five years has been indicated. About one-third of the junior class attend during the summer quarter and complete the junior work by Easter. The other two-thirds are still in the junior year in the following spring quarter. Thus, in the autumn and winter quarters, the whole class is in the junior year, but is divided between summer and spring. The spread thus occasioned is carried over into the senior year and further augmented by a second lightly elected summer quarter, so that members of the group are spread out over five senior quarters. In spite of the greater imbalance in the senior year, that in the junior year is more troublesome because then the students are assigned to the wards.

For the past seven years, our admissions have averaged 68 a year and for present purposes 68 may be taken to indicate our "normal" class. Supposing that a twenty-five per cent increase is adjudged a desirable goal, we are thus required to admit the equivalent of 85 yearly.

Four possible ways of doing this have been considered, none of which involves any change in hours of instruction.

1. Admission of more students (85) each autumn.
2. Admission of one-fourth that number each quarter.
3. Admission of one-half that number every 6 months.
4. Admission of the "normal" number (68) every 9 months.

The extra load on the staff is more or less the same in each case, involving an increase of 25 per cent. This load, plus any addition imposed by the calling up of staff members for special duty, probably will have to be carried as part of our contribution to the defense program. An increase in staff seems highly improbable and a decrease almost inevitable. Therefore, it seems that the problem of staff can be left out of consideration for the moment.

#### 1. INCREASING THE YEARLY ADMISSION

Admission of more students all at once brings up the problem of where to put them. Shortage of student working space is particularly acute in all the laboratories and with present facilities it seems well nigh impossible to handle more students either there or on the wards. A makeshift, such as some scheme of alternation of courses and division of the class into sections, might be worked out for the laboratory courses but that would not help the ward situation, and any change would lessen whatever advantage there may be in the so-called logical order of subjects. Furthermore, this in itself does not meet the fourth and fifth points in that the course is not shortened beyond the present minimum

of three and one-quarter years.\* Shortening may be accomplished by including the now vacant summer quarter which follows the first year and by requiring continuous attendance. This would reduce the length of the course to three calendar years including vacations totalling eight weeks per annum. However, as shown in figure 2, simple inclusion of the now vacant summer quarter, with or without increase in the number of students admitted, results in a yearly gap of one quarter during which there are no juniors or no seniors in attendance.

	1941				1942				1943				1944				1945			
	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU
ANAT.																				
BIOCHEM.																				
PHYSIOL.																				
PHARM.																				
PATH.																				
BACT.																				
CLIN. MICR.																				
PHYS. DIAGN.																				
JUNIOR MED.																				
JUNIOR SURG.																				
OB. GYN.																				
PED.																				
SENIOR MED.																				
SENIOR SURG.																				

Fig. 2. Distribution on basis of present plan of yearly admissions if continuous attendance were required (see text). Here, as in subsequent figures, the class admitted in 1941 is 10 per cent above our "normal."

This would not occur if that summer remained free (Fig. 2—class with the line symbol) and continuous attendance required thereafter. Under those circumstances, however, part of our purpose would be defeated as the three and one quarter year minimum would remain.

## 2. QUARTERLY ADMISSIONS

Figure 3 shows the consequence of adopting the scheme of admitting one-fourth of an increased number of students each quarter, with, of course, continuous attendance. The scheme, on the whole, is a good one, and meets most of



the requirements. The one difficulty is in the transition from the present scheme, for in order to avoid overlap with the class admitted in the autumn of 1941 and attending continuously, the first quarterly group could start no earlier than the summer of 1942. The result would be no junior students in one of the junior quarters, say surgery, in the winter quarter, 1944, and none in another, say, obstetrics and gynecology, in both winter and spring quarters of the same year. The same would be true of senior medicine and senior surgery in the autumn, 1944 and the winter, 1945. Actually, there would be a decrease in the number

	1941				1942				1943				1944				1945			
	A	W	SP	BU	A	W	SP	BU	A	W	SP	BU	A	W	SP	BU	A	W	SP	BU
ANAT.																				
BIOCHEM.																				
PHYSIOL. PHARM.																				
PATH.																				
BACT.																				
CLIN MICR.																				
PHYS. DIAGN.																				
JUNIOR MED.																				
JUNIOR SURG.																				
OB. GYN.																				
PED.																				
SENIOR MED.																				
SENIOR SURG.																				

Fig. 3. Distribution on basis of quarterly admissions (see text).

of graduates in 1945. Further disadvantages are those involved in a complete revamping of departmental teaching schemes of the first two years since every department would have to repeat all its teaching every quarter. A few changes may be necessary in any altered scheme, but the introduction of an entirely different program at this time seems unwise.

### 3. SEMI-ANNUAL ADMISSIONS

This scheme, like the preceding one, meets all the requirements except that of an easy transition. This is illustrated in figure 4 where it can be seen that two

clinical departments would have to teach twice the number of junior students in the autumn quarter of 1943 while the third department would have no students in the winter quarter of 1944. Overlapping occurs also in the senior year. Any attempt to reduce this difficulty would produce more and larger gaps. It may be noted, incidentally, that this plan involves a change from the usual division of the six clinical quarters into three junior and three senior quarters. They are now divided into two junior, two intermediate and two senior quarters.

	1941-1942				1943				1944				1945			
	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU
ANAT.																
BIOCHEM.																
PHYSIOL.																
PHARM.																
PATH.																
BACT.																
CLIN. MICR.																
PHYS. DIAGN.																
JUNIOR MED.																
JUNIOR SURG.																
OB. GYN.																
PED.																
SENIOR MED.																
SENIOR SURG.																

Fig. 4. Distribution on basis of semi-annual admissions (see text).

The junior quarters must be finished before the intermediate are begun, but may be taken in either order. This reduces, but does not abolish, overlapping.

#### 4. ADMISSION EVERY NINE MONTHS

This is the final alternative, which with continuous attendance, automatically increases the output 25 per cent without necessitating a larger beginning class. Figure 5 shows that its adoption with the admission of our "normal" number of students would cause none of the gaps or overlaps of the other schemes, nor would any group be larger than those at present. A fairly well balanced date

schedule can be arranged without too much difficulty and the plan seems to involve fewer general disadvantages than any of the others.

One complication is that each course of the first two years must be taught one quarter earlier in each succeeding year—resulting in a backing-up from autumn to summer to spring, then to winter quarter. This will compel each one quarter course to run during the summer every fourth year, and each two quarter course every alternate year. Such an arrangement is not anticipated with pleasure by anyone, and in certain instances is completely impossible without a definite increase in space and the installation of air conditioning in at least

	1941				1942				1943				1944				1945			
	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU	A	W	SP	SU
ANAT.																				
BIOCHEM.																				
PHYSIOL.																				
PHARM.																				
PATH.																				
BACT.																				
CLIN. MICR.																				
PHYS. DIAGN.																				
JUNIOR MED.																				
JUNIOR SURG.																				
OB. GYN.																				
PED.																				
SENIOR MED.																				
SENIOR SURG.																				

Fig. 5 Distribution on basis of admission of normal size class every 9 months (see text).

certain of the laboratories. Then, too, the Admission Committee is faced with the task of securing students who will be ready to enter at the times specified, four different times in each four year period. This problem may be lessened by the cooperation of the colleges, some of which are urging attendance on summer school to shorten the college course.

The return to normal, i.e., to our present plan, must also be considered. This can be summarized briefly by saying that no difficulty will be encountered if

the change is made at a time when the entering class is due to be admitted in the summer or autumn quarter. This would occur, of course, in the fourth or fifth year of the scheme. At other times, gaps would occur in clinical years, but in the immediate post-emergency conditions it is not anticipated that this would cause much trouble. Thus it appears that, in spite of the difficulties and discomforts involved in the nine months admission, it is the one best adapted to conditions at hand. The fundamental reason for this is that our present scheme, especially in the first two years, is based on a nine months teaching year, and that a change to any other scheme based on three, six, or twelve months, would, therefore, result in either gaps or overlapping.

What plan we shall adopt has not been fully decided. We are, however, ready to cooperate in any way we can and present the above simply as the result of our wondering what would be the least objectionable course if some action became necessary.

In conclusion, it occurs to us to ask what difficulties might arise to confront Committees on Admission if various schools were to adopt several different starting dates—and, further, whether universal adoption of the same plan might ease that situation, should difficulties be met.

On December 17th, Duke University School of Medicine adopted the compulsory twelve months schedule with graduation in three years and the admission of a first year class every nine months.

#### DISCUSSION OF PAPERS BY DR. JOHNSON AND DRS. SWETT AND EADIE

**DR. WILBURT C. DAVISON** (Duke University School of Medicine): These excellent papers have demonstrated that the present curriculum can be adapted to increasing the output of physicians. The advantages of continuous quarter teaching in the clinical years is obvious; the care of patients, the clinical material and the teaching are much more uniform. The difficulty is in rearranging the preclinical quarters. The plan, which Dr. Johnson has presented may produce a gap in the third year in 1943, and in the senior teaching the following year. This disruption is avoided in the arrangement, which Dr. Swett has suggested, namely to admit students every nine months; first year students would commence in July, 1942; March, 1943; January, 1944, and September, 1944, etc.

**DR. O. W. HYMAN** (University of Tennessee College of Medicine): Dr. Johnson commented on the fact that when students are admitted in the summer, he had not been able to discern any antagonism on the part of the students on being forced to enter at that time. At the University of Tennessee we have operated on a four quarter plan for ten years. Our observation is that as far as the student is concerned, we have the unmitigated enthusiasm of the student for a plan which enables him to complete his normal medical education in three calendar years.

It has been suggested, too, that the Federal Government, since this is going to entail increased expense, might be called on to make contributions. It is obvious, however, that when the Federal Government makes a contribution, it ties a string to the educational program, and I believe that medical colleges, as a whole, would be wise to maintain an unhampered control of their educational processes, if possible. It may not be possible, but certainly every time a federal dollar goes into a college, a federal string is tied to the control of education.

Dr. Johnson also made reference to the shortage of physicians. He spoke of a possible shortage. In the southeastern part of the United States, there is now an undoubted

shortage, and if every medical college in that territory increased its graduation of physicians by 25 per cent, it still would be impossible to graduate enough men in the coming fifteen years to replace the men who will have to be lost from practice in that territory by death and retirement. Dr. Davison has recently published some figures on the matter. I am not quoting his figures—I read his paper with interest, but these comments are mine.

With reference to the paper of Dr. Swett and Dr. Eadie. The gentlemen at Duke wish to make a change to the straight four quarter plan, utilizing the summer for the preclinical classes as well as the clinical classes, as a temporary measure. They are, therefore, properly concerned about a transition period, getting from the present plan over to the proposed plan, and then a transition period coming back. That introduces, I think, difficulties in changing to the plan which, in our experience, and in my judgment, is the best plan, the plan of quarterly admissions. It is perfectly true that in changing to such a plan, there will be a gap for a while in the junior and senior years. If the change as contemplated were a permanent change, the gaps would still be there, but in a short while they would be covered and the matter would be taken care of. The psychological difficulty is in going through all the turmoil incident to a temporary change. If Duke University wishes to change for temporary purposes only, I believe that the authors have decided on the scheme which will give the least difficulty in making the transition.

It seems to me that the most serious difficulty in the current plan at Duke—and, if I understand Dr. Johnson correctly, at Chicago—is the fact that when the students enter their junior year, they may take, and do take—and, indeed, must take—their clinical work without logical sequence. It seems to me that in arranging the work that way, one of the most important advantages of a quarterly system is foregone. As far as I know, there is not any medical college that is indifferent to the sequence in which preclinical courses shall be taken. I do not know of any college that gives a physiology course first, and anatomy next and pharmacology third. There is believed to be a logical sequence in which students can take the work and obtain a maximum of benefit from it. Should we not, then, inquire why it is that when the students get to the clinical work, the advantage of logical sequence suddenly disappears and a man may take medicine, surgery, obstetrics, with indifference as to which sequence he chooses?

I believe that arises from historical circumstances. As medical classes increased in size, there came a time when the whole class could not be taken on a given ward or a given service in the hospital at one time. Consequently, the classes were broken down and rotated through the wards in sections. In other words, medical education was molded to the necessities of the hospital. It is not logical; it is not the optimum arrangement; it is an arrangement forced on the school by the facilities of the hospital. We have heard comments made here this morning of how badly medical students are needed in the hospital wards, so that having become accustomed to the presence of students on the wards—and may I add the exploitation of students on the wards—it now becomes advisable still further to manage medical education so that the students may be present on the wards of the hospital in the summertime to take the place of technicians—in part. I do not want to go too far with that.

It seems to me that we can and we should arrange the clinical work in a logical sequence. If we do that, we must admit the students each quarter, and the students admitted should then be carried through their medical education in an orderly and optimum fashion from the time they are admitted until the time when they are graduated.

The inequality of sections, which has bothered the administration at Duke, during some of the summers can be avoided—not quite but nearly avoided—by a control of admissions. We have not been able at Tennessee to avoid it completely because we have not been able to look boys in the eye when they show up for admission and decide which ones were going to fail. More have failed in one quarter than another and we have had a certain amount of inequality in the size of the sections, but, in a general way,



sections can be controlled in size by controlling the number admitted at any given quarter, and they can be carried through in a logical sequence.

It seems to me that clinical medical education suffers a discrimination in this particular point. To take the position that there is no logical sequence for the clinical subjects but a mandatory sequence in the preclinical subjects, seems to me to be untenable. Dr. Swett and Dr. Eadie (I do not know about Dr. Johnson) shudder at the thought of teaching the preclinical courses in the summertime. I believe I am justified in saying that Dr. Swett was almost horrified, and the situation could be ameliorated only by having air conditioned laboratories and other benefits added. Yet at Duke University the teaching of students in the clinical subjects in the summer has been in progress for some time and I presume is viewed by Dr. Swett and Dr. Eadie with complacency. I believe Dr. Swett is an anatomist and Dr. Eadie is a physiologist.

It seems to me that to take the position that clinical instruction can proceed through the summers but that by all means preclinical instruction should be avoided in the summers, is to assume tacitly that preclinical studies require a concentration, require a devotion to study which can be disposed of, in part at least, when one gets to the clinical studies. It need not be labored that, after all, clinical instruction is the nub of the whole matter. Surely, if we are to give the medical student the optimum opportunity to study medicine, it should be when he gets to his clinical years.

I am, of course, quite conscious of the fact that putting courses into logical sequence does not give them an intellectual content; but it does give the best opportunity to present the subject matter of those courses in such a way that they may be developed logically for the student and there will be the maximum opportunity for the student to understand what he is doing as he goes along and to retain his knowledge for later years when he wants to use it. I believe that any quarterly scheme which provides that the students, as soon as they reach the clinical years, may take the work in any sequence they see fit, is missing an opportunity which is laid in the laps of the medical colleges operating on the four quarter basis, and that this is a very important matter.

My chief comment on the papers is that I feel that they fall short of the opportunity in not providing a plan by which clinical instruction may receive a definite impetus to improvement.

DR. L. R. CHANDLER (Stanford University School of Medicine): Dr. Johnson presented one method of scheduling a continuous four quarter per year schedule of medical education in three calendar years and told all the advantages of how it could be done, mentioned some of the hazards that must be faced, but, I think, proved that they were not insurmountable, and then said he did not think it was any good.

And both the auditory and visual impression left by Dr. Swett was one of confusion, primarily because we could not see his scheduled system in detail. I do not want to argue about the various methods of scheduling. They have all been discussed today: admit a new class every quarter or once a year or every nine months. The problem of financing such a program and how it would affect the working hours of the faculty was mentioned. I think the crux of the situation centers around the students, and the confusion in the minds of the deans as to how to schedule this in a practical manner without abusing anybody or without lowering the standards of their own educational program, the content of the subject matter that they teach.

There are various ways that it can be done and there are certain hazards that will have to be avoided. There are, in my opinion, many advantages if it is desirable for the United States to have an increased number of doctors available for civilian and military services, and have them available promptly.

I do not think that the Army, the Navy or the Public Health Service is in a position right now to say exactly how many men they are going to need July 1, 1943. The Navy can, perhaps, come closer to it than either one of the other two services. I do not know

where you can get any reliable figures on the civilian needs for medical service at the present time that covers the entire country. I think General Ireland and General Patterson and those of you who have had military experience will substantiate this expression of opinion, that when, as and if the military forces of the United States have to enlarge, and enlarge promptly, they are going to select and put into service about seven doctors per every thousand men, and they are not going to ask this Association or anybody else, how to do it. They are going to get those doctors. They know now where they are and where they can be had.

I do not know whether it is important or not for more doctors to be made available for military and civilian services beginning in 1942. I think that is the basis of the decision that this group should make. My own personal opinion is that it is highly desirable, it is almost essential, that we begin now to make available more doctors. It can be done by scheduling a four quarter year round system so that the present curriculum can be scheduled in three calendar years, without long vacations, instead of four calendar years with one long vacation. There are several ways in which it can be done.

It is quite true that during that period of transition of three years (and that was mentioned by all speakers, I think), various departments will be called on to do more teaching unless there is more faculty available. The first year group will be called on to do more teaching in the first and second years, and the senior faculty two years also. That is not insurmountable. That may be the lesser of the evils we possibly are facing.

DR. E. S. RYERSON (University of Toronto Faculty of Medicine): It may interest you to know what has happened to the country to the North of you with reference to the shortage of doctors for both the military service and civilian needs. Last May the deans of the medical schools of Canada were called to Ottawa by the Surgeon General of the medical services to discuss how he could be provided with 1,000 doctors by the end of next December (1942). The deans discussed this for some considerable time and, believe it or not, at the end of two hours agreed upon four definite resolutions and general principles, realizing that they had no authority to say what their particular school would do or how it could be done.

These principles were the following: The first was that there was a shortage of doctors for both army and civilian needs, and that the medical course should be speeded up. In order that that might be done, a suggested scheme was considered in which in the speeding up and in the getting of the graduates into military service as quickly as possible, it might be possible to shorten the internship from twelve months to eight months, making the internship the same length as an academic university year. That principle was also agreed upon.

The third was that the licensing body should be approached to accept the graduates who had completed their education in the speeded up course.

The fourth was the one concerned with finance, that some means should be provided by the Government to assist those students who were unable to finance a speeded up course, in which they would have to attend for ten months instead of eight, and also to assist those schools which could not finance the year with the speeded up course owing to the additional cost of running the school. It was asked that the Government should consider the means of providing that additional financial assistance.

We all went home to our respective schools. At Toronto, as a matter of fact, we had this scheme worked out, for a speeding up of the course which I will describe in a moment. We were shortly asked to inform the Surgeon General approximately how much financial assistance would be needed for the students and staff to speed up the course. Apparently some of the requests were a little bit alarming to the powers that be and they, therefore, suggested that perhaps we had better hesitate a little about speeding up the curriculum at the present moment. However, that matter was discussed at Toronto and our faculty were all convinced, both from the standpoint of the staff who were anxious

to do something for the war, and from the standpoint of the students that the course should be speeded up. We have had great difficulty with a great many of our students who want to go into the active units and not go on with the medical course, particularly when they have to spend four months in vacation in the summer. As a result of that agitation on the part of the students, we were very insistent on having something done.

So we decided, in spite of the fact that we were not assured of any financial assistance from Ottawa, that we would proceed to lengthen the course and speed it up. That is not a very difficult thing to do at all. As a matter of fact, it has required little change in the actual curriculum. We have three terms in one year and all that has been done is that the first term of the next succeeding year has been moved back into the preceding year. That is the whole change that has taken place. There have been some minor little adjustments in doing that, but other than that there are four terms of ten weeks instead of three terms of ten weeks, and the fourth one runs from April to June and it is the first term of the next succeeding year.

Last August 25, students in all our five years came into attendance—not the first year which is really the second pre-medical corresponding to yours. That meant there were 575 students that came back. Practically, there was not a man who didn't come back under the speeded-up system. The graduating class that began at that time will graduate at the end of March or early in April and will be prepared to go into a hospital and take an internship on the 1st of May. They will have eight months' internship and be through the following December. The next succeeding year will take the first tri-semester of the following year and will graduate in December and be prepared to go into the hospitals when the other men have gone out. As a result, we will graduate three classes in two years, or the man who comes in for his first year will graduate in four years instead of five. That in essence is what has happened with our course, and so far it is working very satisfactorily.

The only difficulty has been that so many of the other schools couldn't face the question of the financing of the speeding up of the whole course on account of financing the faculty and because many of their students have to earn money in the summer in order to carry themselves through; so we have proposed a loan scheme whereby financial assistance might be provided and our faculty recommended to our Board at the university that a loan be provided for the students. They wanted to know how much this would be. We worked this out and in June we canvassed all the students, and out of 575 students, the total amount that was asked for for university expenses, that is fees and living expenses because they had to live for ten weeks longer in the town, amounted to between forty and fifty thousand dollars, a mere drop in the bucket compared to what is being spent in all sorts of military educational programs. That was forwarded to the Board at the University and they are now in the process of conferring with the Federal Government to see if that money can be provided as a loan, not a gift to the university but a loan to individual students in order that they may go on and in that way be ready sooner to serve their country.

If all of the other colleges could be provided with similar facilities, there is no doubt whatever that they also would be prepared to speed up their courses, and on that basis we feel it is really a federal matter rather than one for each of our Provinces to provide the financial assistance for them.

As far as the staff goes, if the University receives one-third more fees from all the students, it should be able to meet any extra financial expenses. As a matter of fact, we have worked that out and find that with the students' paying not only one year's fees but a year and a third, it brings in sufficient money. The student himself doesn't pay any more for his total medical education but he pays it faster, and in that way he, himself, needs further financial assistance.

That scheme, as I say, has been going since the beginning of this year. Fortunately, we have the cooperation of the licensing bodies. They have agreed to accept our gradu-

ates of the speeded-up curriculum. The Medical Council of Canada will conduct an examination at the end of March and the beginning of April so that our students now can take their university and licensing examinations concurrently, a method introduced last year, which worked very satisfactorily the first year and we hope it will continue so that a student writes the one examination for both University and Council. First the answers are marked by the university, then if the man passes the university examination, his examination papers go out to the Medical Council of Canada and they are marked, and as the result of that, we obtained last year practically the same results we had when both examinations were taken independently. We feel that this concurrent examination is quite satisfactory; so the men graduate, become licenced to practice, go into the hospital for their internship every eight months.

The graduates from the University of Manitoba, the University of Alberta, and the University of Western Ontario, and Queens University will also take their licensing and graduating examinations at the end of March, and therefore be prepared for military service to meet the emergency.

With the speeded-up scheme, classes will graduate every eight months, so every two years the course will commence at the time the regular session has been starting in the past, and it would be possible at this time to revert to the old system without any difficulty should the war emergency have ceased to exist.

DR. VICTOR JOHNSON (University of Chicago Medical School): I quite agree that if the medical schools can finance any such program themselves, they certainly should do so. My only point is, it may become necessary, if the emergency deepens, if the Army is doubled in size and if 10,000 new physicians are required, to depend on Federal assistance.

With regard to the logical sequence of medical courses, I think that this has also been overemphasized. In some schools it is now felt that the logical sequence in the clinical years is to give outpatient work in the junior year and inpatient work in the senior year. Other schools feel that the exact reverse is the logical sequence, and I think it may seriously be questioned whether there is a single logical sequence and whether or not several sequences might not be very workable and very satisfactory.

In the preclinical subjects, I would also disagree that there is a single logical sequence. In some instances, a sequence may be somewhat superior to a possible alternative, but even with regard to physiology and anatomy, at the University of Chicago we have in our medical courses in physiology undergraduate students and graduate students who have not had and who never will have anatomy. These students compare very favorably in their work in physiology with the medical students who have had anatomy.

About not liking summer teaching in preclinical subjects, I can say that I like it and that I choose to teach in the summer. That is the case with many men at Chicago.

Dr. Chandler stated that if the Army needs 10,000 or more new doctors, it will get those doctors, and I quite agree with him that it can and will. Certainly, it will get those doctors, however, from civilian practice and our obligation is not fulfilled if we simply state, "Well, you take these men from civilian practice." Our obligation is not finished unless we regard the total needs of both armed and civilian population.

## Newer Phases of Psychiatry in Relation to Army Problems\*

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Less than a quarter century has elapsed since the United States entered World War I. Much has happened since that time in the field of world organization, the styles of warfare and, likewise, in the application of psychiatry to military problems. Indeed, it may be said that the World War marked the emergence of psychiatry from its swaddling clothes. Before proceeding, therefore, to a consideration of the newer applications of psychiatry to military problems, a brief review of the past twenty-five years is not entirely out of order. In 1917, psychiatry, as a specialty, was confined almost entirely to the mental hospital, with occasional forays into the court room. The epoch making work of Freud, which was to revolutionize our understanding of mental processes, was only beginning, in the face of very considerable opposition, to gain headway. Psychiatric nursing and clinical psychology were just beginning to be heard of, and psychiatric social work was almost an unknown term. The psychiatrists of the country were relatively few in number and were looked on with a certain amount of tolerance, more or less kindly, or with frank suspicion, by the rest of the medical profession.

Thanks to the genius of Doctor Thomas W. Salmon, the important part which psychiatry might play in the selection of troops was clearly recognized, and those reserve medical officers who had had even a modicum of psychiatric experience were utilized to deal with this new problem. The methods of recognition of nervous and mental disorders left something to be desired, particularly when put into effect on a large number of subjects moving through an examining line at high speed. It did not take long, however, for the company and field officers to recognize the damaging effect on the morale of troops exerted by the mentally disequibrated, particularly under battle conditions. The importance of closer scrutiny was emphasized in a cable from General Pershing to the Chief of Staff in July, 1918: "Prevalence of mental disorders in replacement troops—suggests urgent importance of intensive efforts in eliminating mentally unfit from organizations new draft prior to departure from the United States."

Under combat conditions, in addition to psychotic episodes, new and strange symptoms began to be observed which were given the alliterative name of "shell shock" by the British. The fundamental nature of these symptoms, which were in essence psychoneurotic, was not fully recognized at the start, and undue emphasis was laid on the physical effects of blast on the central nervous system as the principal causative factor. It was recognized, however, that early treatment was essential and that that treatment must take place apart from the other sick and wounded on account of the effect on them. After the Armistice, the

\*Read at the Fifty-second Annual Meeting of the Association of American Medical Colleges, held in Richmond, Va., October 27-29, 1941.



Army found itself with large numbers of psychotic and neurotic soldiers in Army hospitals, many of these being cared for in temporary or improvised hospitals which were far from satisfactory. The numbers, too, were staggering, and as time has gone on, they have become even more so.

Thanks, in part, to the very generous attitude of Congress with regard to compensation and hospitalization, there are now approximately 31,000 veterans of the World War under care in the hospitals of the Veterans Administration, or about 750 per 100,000 or living veterans. Likewise, about 69,000 veterans are receiving compensation for neuro-psychiatric disability which has been legally adjudicated as connected with service, this at an average cost to the Government of \$50.84 per month per man. In short, since about 1923, a sum approaching one billion dollars has been expended by the Government for compensation and for hospital care of the neuropsychiatric disabilities occurring among veterans of the World War, and it has been estimated that every case of this sort during his lifetime is likely to represent a cost to the Government of approximately \$30,000. The economic importance of this group is so startling, that at the beginning of the present emergency the necessity of taking steps to prevent a repetition of so staggering a load, was recognized.

The onset of the present emergency found a situation with relation to psychiatry which was substantially changed in several particulars. First of all, the dynamic approach to the study of mental processes inaugurated by Freud has resulted in a far clearer understanding of the significance of mental deviation and, indeed, of disease in general. Psychosomatic medicine, that branch which deals with the interaction between what may be termed the somatic and the psychic, has shown a marked development. Psychiatry is being presented in the medical school and in the advanced general hospitals of the country in a manner to illustrate the fact that it is not an isolated specialty but one which has relationship to all the branches of medicine; that the individual cannot be treated apart from the somatic complaint, that his somatic complaints have a bearing on his emotional state, and that, in turn, his emotional state has an important effect on the functioning of his bodily organs. In this development the psychiatrists have been greatly aided by the physiologists, such as Cannon and Bard. As for personnel, psychiatrists are far more numerous than in 1917, and many of them are engaged in extramural work; they are better trained and broader in interests, more alert to recognize the borderline and incipient conditions than were the institutional men of 1917.

Clinical psychology has advanced, and as psychologists have worked with psychiatrists each has come to recognize his need of the other and the importance of teamwork. They have developed numerous tests in recent years, many of them of great value with relation to aptitude and to the detection of early preneurotic and prepsychotic traits, tests such as the Rorschach and the Thematic Apperception test. In the same manner, psychiatric nursing has been further developed as a specialty. Psychiatric social work has now reached maturity, as have the various social instrumentalities, such as social service exchanges, through which



significant data regarding the past history of a candidate for the military service may be secured. Various advances in the treatment of psychoses and neuroses have been developed; one thinks of the fever treatment of general paresis, and one may think, with certain reservations, of the value of shock therapy in certain other forms of mental disorder, notably the depressions. The electroencephalograph has cast considerable light on the nature of nerve activity, and has shown itself to be of distinct value in detecting latent epilepsy—a fact of very considerable moment in the selection of candidates for the air service.

The Army and Navy have recognized the importance of keeping out of the military service, so far as possible, those persons who are not mentally suitable for it. At the request of the Health and Medical Committee made a year ago, a Committee on Neuropsychiatry was set up by the National Research Council which has advised the services on matters relating to neurology, psychiatry, neuroses and personnel. Provisions have been made for the utilization by the Army and Navy of the classification of medical personnel prepared by the various committees of the National Research Council working with the American Medical Association. Unfortunately, this work has been hampered to some extent by the decentralization of the Army, with the result that the emphasis placed on proper assignment of psychiatrists has been dependent on the corps area surgeon rather than on the office of the Surgeon General in Washington. As a result, the assignment has been somewhat "spotty."

It is generally recognized by military men and by others that there are certain persons who are suitable for the military vocation, whereas there are others who are not, and that unsuitability may be due to physical defects or to defects of personality or intelligence. Unfortunately, this idea has not been wholly grasped by all of the 6000-odd local boards set up under the Selective Service System. Some have made a determined effort to follow the spirit as well as the wording of the regulations, and to weed out those candidates who had a history of definite mental disorder or who showed signs of being emotionally or intellectually unsuited. It should be recognized that the placing of a man in the military situation calls for a distinct effort at adjustment on his part. He is suddenly taken away from his usual haunts; is placed in a situation in which he loses his individuality and is entirely regimented; is thrown into close proximity, without privacy, with many men whom he has not known formerly. Under these circumstances, certain men develop mental disorders, major or minor, which render them unsuitable for further service. Obviously, every person who breaks under this situation represents a liability to the Government both from the immediate cost of care and training, and also as a potential pensioner in the future. Furthermore, such a person, if he had not been placed in a military situation, might well have remained an asset instead of becoming a liability in the community. The induction of such individuals therefore represents an unnecessary wastage of human material. A fair number, of course, recover but some do not. It is for this reason that every possible screening device should be used. On the basis of the experience in Canada, where very little such screening has been carried on, it has been stated that 34 per cent of a group of 200 admissions

to a military hospital should have been recognized on the basis of their preexisting personalities and histories as unfit for military service; that is, that they should not have been permitted to enlist.

Approximately 6 per cent of the rejections by the local boards in this country have been due to nervous and mental conditions, a proportion substantially greater than at the time of the World War; this probably indicates more careful screening. The rate of breakdowns among selectees as compared with that of National Guard and regular soldiers of approximately the same length of service, is so much lower that it can hardly be explained as due to chance alone. In other words, there is definite evidence that the campaign which has been conducted to inculcate in the physicians of the local boards, the medical advisory boards, and the induction boards of the Army, has borne fruit. It is, therefore, in my personal opinion most unfortunate that only recently the Selective Service System announced that after about January 1, 1942, no further medical examinations would be held by the local boards. To abolish these examinations will be to throw a heavy load on the induction boards, which are already hard pressed. Furthermore, the local board has at hand the significant information concerning the history of the inductee, information which would not ordinarily be available at all to the induction board unless a rather cumbersome method of conveying such information were arranged and used. The additional cost of the proposed scheme, both in travel of boards and draftees, and in future compensation for psychiatric casualties, will eventually cause serious criticism if the step is carried out.

The Army has arranged for the publication of a psychiatric brochure which will be distributed to all medical officers in the Army as a means of aiding them to recognize early symptoms of impending breakdown among their men. The Army, too, has directed that each induction board shall have one psychiatrist for every fifty average daily load of inductees. The Selective Service has conducted a number of very helpful local seminars for the benefit of the medical members of local, advisory and induction boards.

After the selectee is inducted, a series of aptitude tests are given to him at the reception center for the purpose of aiding in his proper classification. This is a distinct step forward in applied psychology and should have valuable results. It is planned that when a man develops mental or neurotic disorder he will be discharged as soon as possible rather than be kept in an Army hospital. If the disability is found to be due to service he will be sent to a Veterans Administration hospital; if not, arrangements will be made to send him to his home, to a state hospital, or to Saint Elizabeths Hospital in Washington, D. C. Some method of expediting his discharge should be found. The present method, taking six weeks or more, often results in harmful delay in instituting proper treatment. If one thing was learned as a result of the last war, it is the early treatment of breakdowns, which is most important. It is unfortunate that the psychiatrist wards in Army station hospitals have not been better planned to provide more of

the essentials of early treatment. The general plan, however, is that the patient will be sent, as soon as feasible, to one of the larger general hospitals which are reasonably well equipped.

Aside from the application of certain mechanical tests, particularly the electroencephalograph, which is useful largely only in doubtful cases of epilepsy, and from certain personality tests, which are still somewhat in the experimental stage if used on a large scale, the important thing in the proper selection of troops is still the psychiatric interview, reasonably unhurried and accompanied by suitable information concerning the past history of the patient. Ingenious methods of shortening and formulating the psychiatric interview have been devised, and it is probably possible, through a standardized interview of about ten minutes, to weed out the bulk of labile selectees. Ultimately, we face the necessity of having more psychiatrists, of giving them sufficient time to make their studies, and of giving them adequate tools with which to work. The men are available if their suitable assignment can be arranged, as the Surgeon General intends it shall be. In dealing with so complicated a thing as the human personality, there is no royal road. The experience of the examiner, his understanding of the wellsprings of human nature, and his ability to secure pertinent information regarding the history of the subject, are all important. As a corollary should be mentioned the necessity to give proper weight to the psychiatrist's recommendations. Under certain circumstances the line officer is in a position to nullify a diagnosis of psychopathic personality or mental deficiency, and to retain an unfit candidate who is likely, by reason of his disability, to be a liability and a drag on morale. It is to be hoped that some of the elementary principles of mental hygiene may be inculcated in those officers who are responsible for discipline.

To the psychiatrist, who is interested in the mental mechanisms of the individual as well as of the group, it seems strange that the very important topic of civilian morale has received so relatively little attention. The Committee for National Morale has done yeoman service in exposing the type of propaganda to which the American people are being subjected by enemy sources. Their volume, entitled "German Psychological Warfare," should be read by every thinking citizen. Their efforts are worthy of official recognition, as are those of certain other groups of psychiatrists and psychologists who have interested themselves in this vital problem. There seems to be no reason why steps should not be taken under governmental auspices, frankly and honestly, to combat the insidious effects of enemy propaganda. In such an effort, psychiatrists and psychologists are in a position to be of patriotic service, and eager to serve. Arms are of little use without a firm will to victory.

## "What Is Wrong With the Teaching of Materia Medica and Therapeutics in Medical Schools?" An Answer

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In answer to Dr. Adam P. Leighton's inquiry "What is wrong with the teaching of materia medica and therapeutics in medical schools?" let me reverse the question and ask, "What is wrong with the examinations presented by state boards of registration in medicine?"

Inasmuch as I have been connected with institutions of higher education since my entrance into college in 1907, and intimately connected with teaching in medical schools since 1914, and inasmuch as I am also a licensed physician in Missouri and Pennsylvania, I feel I am not unqualified to attempt an answer to his question. I have seen hundreds of young men graduate from our medical schools and I am confident that they are better trained and better qualified to practice modern medicine than were the men who graduated at my time and started their medical careers then.

Further, to prove my qualification to answer Dr. Leighton's question, let me say that I, too, had separate and distinct courses in materia medica, pharmacy, prescription writing, toxicology, pharmacology and therapeutics. The course in materia medica which I took as a medical student in the school of pharmacy consisted of more than seventy-five hours of lectures and recitations and additional hours in laboratory work. We had to memorize the names, the sources of galenical as well as official preparations, their doses, the time of the year for collecting the crude drug, etc., of more than 150 preparations. I am sorry to say that most of this information has been of no particular value to me as a teacher or practitioner. Moreover, it is of little concern to the physician whether the active principle is obtained from the root, tuber, stem, bark or leaf. Due to the addition of new information acquired on many subjects since our graduation, and with the addition of new courses not studied by us, the medical schedule has become unusually heavy and, consequently, some minor subjects receive less attention today than formerly and materia medica happens to be one of these.

I am delighted with Dr. Leighton's statement that "A few did have a fair comprehension of pharmacology." Today, the best courses in pharmacology (which, according to Webster's International Dictionary, is "(1) The science of drugs, including materia medica and therapeutics; often specifically, pharmacodynamics; (2) the materials of this science; the properties and phenomena of

<sup>1</sup> J. Assoc. Am. Med. Colls., 16:367 (Nov.), 1941

drugs, especially with relation to their therapeutic value.") include pharmacodynamics, materia medica, pharmacy, toxicology, prescription writing and therapeutics. Not one of these branches can be divorced completely from the other. I will admit that the time spent on some of these sections is short, but the information given in the course is more than adequate for the practicing physician. Moreover, prescription writing and therapeutics are usually continued in the departments of medicine during the junior and senior years.

Being a teacher of pharmacology and being indirectly responsible for teaching materia medica to our medical students and, perhaps, partly to blame for the poor showing of medical students on medical state board examinations in materia medica, I, therefore, cannot permit Dr. Leighton's query to go unchallenged.

In my institution, the course in pharmacology is introduced by a series of lectures on pharmacy, prescription writing and toxicology and I can assure Dr. Leighton that the students see and are encouraged to consult the latest United States Pharmacopoeia, the latest National Formulary and each one is given a copy of New and Nonofficial Remedies compiled by the Council on Pharmacy and Chemistry of the American Medical Association.

In pharmacodynamics, the drugs are presented in groups according to their point of action in the body. Moreover, at some time during the course each drug is presented to the class with reference to its source, from plant (leaf, fruit, etc.) or animal tissue, or, if it is a chemical, whether it is pure or made synthetically; to its pharmacological action, toxic symptoms with overdosage and treatment, official preparations and dosages (this includes also the important ones described in N.N.R.) and to its therapeutic uses. The writing of prescriptions using these drugs is continued throughout the year during the recitation hours.

In addition to these lectures and recitations students have a laboratory course in pharmacy in which they either make or compound such preparations as tinctures, fluid extracts, suppositories, tablets, syrups, pills, etc., and a full course in laboratory pharmacology and toxicology. As a rule, the student has the opportunity to learn, at least, the names and dosages of all the official preparations as well as many of the important drugs described in "New and Nonofficial Remedies." We do not expect the student to memorize all of these drugs but only those of sufficient importance for such effort. We believe it is better for a student or a practitioner of medicine to know and to be able to use intelligently a few members of each group of drugs than to know a large number of them and to be unable to use any of them correctly.

Having given the background of my training and that of my students, I shall now venture an opinion on the cause of the failures in the Maine State Board examination described by Dr. Leighton. I believe the poor showing in this examination by the students cannot be blamed wholly on the teaching of



materia medica and therapeutics in medical schools. A part of the blame lies in the type of questions asked. In two of the questions obsolete drugs are given, and in one a proprietary remedy, none of which is an official U.S.P. preparation.

In question 1(a) eight official preparations of iron with doses are called for. In the United States Pharmacopoeia XI twelve iron preparations are listed; however, six of these are to be excluded from the new edition of the United States Pharmacopoeia XII. It is, therefore, apparent that only a few of these preparations are actually needed and useful in the practice of medicine. Basham's mixture (solution of iron and ammonium acetate) mentioned by Dr. Leighton as being unknown to the examinees has not been official since publication of the United States Pharmacopoeia X; and Monsel's solution (solution of ferric subsulfate) has not been official since publication of the United States Pharmacopoeia IX, more than thirty years ago! These drugs have been relegated to the National Formulary and it is, therefore, assumed that they have been replaced by better preparations. As far as medical students are concerned, surely only those preparations which are official and a few of those which are important and listed in "New and Nonofficial Remedies" should be studied or should be asked for on medical state board examinations.

In question 1(b) six official preparations and doses of mercury are asked for. Although there are sixteen official preparations of mercury in the United States Pharmacopoeia XI, only seven are used internally and have doses. Two of these are to be dropped in the twelfth edition.

In question 2, the examiner asked for a prescription written in Latin in which some of the preparations are not official. Both fluid extract of senega and fluid extract of squill were omitted in the eleventh edition of the United States Pharmacopoeia and will not appear in the twelfth edition. We hurriedly cover the subjects of senega and squill in our course and do not expect the student to know more about them than that such drugs exist.

In question 3, the same criticism can be made. The prescription calls for camphor monobromate which was official in the United States Pharmacopoeia IX but was not in the tenth and eleventh editions. Acetphenetidin is a United States Pharmacopoeia X preparation and acetophenetidin, which is the same though the spelling is different, is official in United States Pharmacopoeia XI and the examinee may not have known the misspelled preparation.

In question 5, argyrol is the drug to be used in writing a prescription. Had the examiner called for the official preparation, argentum protinicum mite, or mild protein silver, instead of using the trade name, argyrol, more of his examinees would undoubtedly have known what the drug was and would have answered the question correctly.



One criticism can be made concerning all of the prescriptions and that is that they must be written in "correct Latin." Although I write all my prescriptions in Latin in teaching prescription writing to my class, nevertheless, my students are permitted to write their prescriptions either in English or in Latin, using either the metric or apothecary systems. I believe that it has been shown that prescriptions written in the official English are just as reliable as are those written in Latin.

The examiner comments "Each one admitted that the examination was fair." This answer could be anticipated. I would not expect any man who has not passed a subject to admit that the course was poor or an examination unfair. Only after he has passed the subject will he state his impressions frankly and to the point.

I cannot agree with Dr. Leighton that medical schools are turning out a "crowd of scientists, theorists and medical nihilists." If our graduates are not trained as well as they should be in therapeutics and prescription writing, this is not entirely the fault of the departments of pharmacology but also of the departments of medicine. Frequently, the clinician lays too much stress on diagnosis and too little on treatment. This defect in teaching, if it exists, can be corrected only when men in the departments of medicine become interested in drugs, their actions and therapeutic uses. This is being done in our better medical schools and hospitals today. After all, therapeutics is mainly applied pharmacology and drugs can be used intelligently in treating patients only when their pharmacological actions are known.

The recent graduate is surely not the only medical practitioner trained by detail men from pharmaceutical houses. I find the old time practitioner prescribing as frequently, if not more frequently, drugs with either patented or copyrighted names and put on the market by pharmaceutical houses when official preparations are available to him and to his patients at a considerable saving of money. Indeed, only too frequently they use drugs which have not been accepted by the Council on Pharmacy and Chemistry of the American Medical Association which, therefore, may be branded as nostrums and their use as quackery.

It is my opinion that unless the members of the medical licensing boards of our states have kept abreast of the times by review courses in pure sciences and in the clinical branches in our modern medical institutions, difficulties between examinees and examiners will naturally occur. Medicine, i.e., physiology, physiological chemistry, pharmacology, therapeutics, etc., have made such strides forward in the last twenty-five years that even those of us engaged in research and in the teaching of one of these subjects have difficulty in keeping pace with the advances made each year. Since I graduated from medical school, numerous

vitamins have been isolated and identified; the value of organ extracts, such as insulin in diabetes mellitus, liver and gastric mucosa in pernicious anemia, blood plasma in shock (hemoconcentration and capillary venous congestion), etc., have been demonstrated. Various hormones and endocrines have been isolated and their actions and therapeutic values determined. The presence of the carotid and aortic sinuses, and carotid and aortic bodies have been demonstrated and their relative functions established; the production of many specific sera of the thirty-two types of pneumococci and antitoxins and sera of other bacteria, and the introduction for the first time of drugs inhibiting or inactivating (plants) bacteria, the sulfonamide group (sulfanilamide, sulfapyridine, sulfathiazole, sulfadiazine, etc.), have been introduced into therapeutics (surgery and clinical medicine), pharmacology and toxicology. I could go on enumerating hundreds of advances made during this period. All of this great volume of new knowledge must be learned by the present day student so it would seem unwise to cling to the old outmoded methods and discarded drugs.

I believe that the examination in the so-called pure sciences might be conducted best by men engaged in teaching these subjects. In our medical schools today every attempt is made to graduate only those men who the faculty believes will do credit to the institution and to the communities in which they practice and weed out those who seem unsuited to the responsibilities which the practice of medicine entails.

## Report of the Committee on Preparedness of the Association of American Medical Colleges\*

### PLANS FOR AUGMENTING MEDICAL CORPS OF DEFENSE FORCES

Your Committee on Preparedness has had several conferences recently in Washington regarding the urgent need of medical officers for the Army. The pool of reserve officers is practically exhausted. Only 1,560 graduates of last year's class have applied for and been granted commissions although all under 28 years of age are under the jurisdiction of Selective Service. The reduction of the upper age limit under the Selective Training and Service Act of 1940 as amended to 28 years has made it possible for a number of interns, hospital residents and graduate fellows to escape induction, even though they had been deferred in order to complete their training.

The War Department has asked Selective Service to produce more medical officers for the Army and Selective Service intends to comply as fully as possible. The needs of the Medical Corps of the Navy are less urgent at the moment. The program for the Navy is discussed later in this report. There are two phases of the problem. The first relates to medical students and the other to interns, residents and graduate fellows.

The War Department has created a Medical Administrative Corps Reserve and Selective Service is prepared to recommend to local boards that the deferment of all third and fourth year medical students, regardless of their classification under Selective Service, who are eligible for a Commission in the M.A.C.R. be discontinued as a means of "encouraging" such students to join up. Students so commissioned as Second Lieutenants (inactive) will be under the jurisdiction of the Surgeon General of the Army and will be eligible for call to military duty for a period of five years from the date of their commission. This will have the effect of creating a pool of potential medical officers at the time these students graduate and complete the internship of one year which is requisite for a commission in the Army Medical Corps.

Fourth year students who are in the M.A.C.R. should plan to apply for a commission in the Medical Corps Reserve within twelve months after graduation from medical school. Each student in the Naval Reserve should apply about three

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\*Read by Dr. Willard C. Rappleye, chairman, at the Fifty-second Annual Meeting of the Association of American Medical Colleges held in Richmond, Virginia, October 27-29, 1941.

Committee on Preparedness: Willard C. Rappleye, chairman; William Pepper; C. Sidney Burwell; Harold S. Diehl; Fred C. Zapffe.

months before graduation for a commission in the Medical Corps Reserve of the Navy. It is expected that they will be permitted to complete an internship of at least one year. If a student in the M.A.C.R. fails to apply within one year after graduation for a commission in the Medical Corps Reserve he will be returned to the jurisdiction of Selective Service and becomes inductable into the regular military forces. When he accepts a commission in the M.A.C.R. (Army) he is liable to call for active duty for a period of five years from the date of his Medical Corps commission (time in the M.A.C.R. is not credited to his new commission).

Your Committee urged that the discontinuance of deferment of third and fourth year students be not taken until after the medical schools at the Richmond meeting had an opportunity voluntarily to present the situation to the students. The officers of the Army and Selective Service granted that request.

The effective way to "persuade" the third and fourth year students to apply for a commission in the M.A.C.R. is for the deans of the medical schools to refuse to support the request of students for further deferment under Selective Service until they have applied for commissions in the M.A.C.R., if physically and otherwise eligible for such commissions. There then would be the choice of either joining the M.A.C.R. or being inducted into military service as a private. It is, therefore, the recommendation of your Committee on Preparedness that the Association of American Medical Colleges go on record as favoring the application of every third and fourth year student for a commission in the Medical Administrative Corps Reserve of the Army (or the Naval Reserve described later) and that the requests for deferment under Selective Service by any third or fourth year student be not supported until the individual has applied for a commission in either one or the other reserve corps. Those who are accepted for a commission in the M.A.C.R. will be transferred from the jurisdiction of Selective Service to that of the Surgeon General of the Army. These individuals would then be placed in a pool assigned geographically to the nine Corps Area Surgeons.

It was suggested by your Committee that in each corps area there be created by the Surgeon General an Advisory Committee to the Corps Area Surgeon comprising representatives of the medical schools, of the hospitals and of the medical profession of that area. The proposed Advisory Committee would advise the Corps Area Surgeon in calling to duty the reserve officers in such a way that their withdrawal from the hospitals and other institutions would interfere least with the services which those institutions are rendering to their local communities or that would impose as little handicap as possible in the continued training of these young men in the various specialties. As far as practicable residents in hospitals

approved for graduate education will be permitted to complete preparation for their specialty. All concerned recognize that the military as well as civilian needs for specialists should be given full consideration.

The Surgeon General has approved this plan. The Executive Council is requested to nominate to the Surgeon General a representative of the medical schools for the Advisory Committee to the Corps Area Surgeon in each of the nine corps areas.

A somewhat similar situation pertains to interns, fellows and residents. Even though they have been deferred by Selective Service in order to complete their training or to maintain the essential services they are rendering in their local communities, these individuals are not inductable when they reach June 30 following their 28th birthday. A considerable number of such young men have taken advantage of this situation and have not accepted commissions or have not carried out the implied obligation of their deferment. It has, therefore, been proposed by Selective Service that the deferment of all interns, residents and fellows be discontinued for those who are eligible for a commission in the Medical Corps Reserve.

It was suggested, as in the instance of medical students, that this not be made effective immediately but that a conference be held with representatives of the national hospital organizations. It is quite clear to all that the situation in the hospitals requires more prompt action because of the older age of the group and also that it is administratively more difficult because there are about 800 hospitals approved for internships and residencies. At the suggestion of your Committee another meeting was held in Washington with representatives of the Army, Navy, Selective Service, the American Hospital Association, the Catholic Hospital Association and the National Hospital Association. It was agreed that the American Hospital Association, representing the Catholic Hospital Association and the National Hospital Association, would be asked to nominate representatives to the Advisory Committee to the Corps Area Surgeons. This has been done.

The American Medical Association will be asked by the Surgeon General to designate the representatives of the medical profession on these Advisory Committees.

The whole matter was left for review after January first.

Under this general plan the medical students of the first and second year including those students still in college who have been accepted for admission to the next first year class of approved medical schools will be under the jurisdiction of Selective Service. Those who are members of a college R.O.T.C., should be advised to apply three months before graduation from college for transfer to the

Medical Administrative Corps Reserve. All third and fourth year students who are eligible for a commission in the Medical Administrative Corps Reserve will be expected or obliged to take commissions in that organization, placing them under the jurisdiction of the Surgeon General of the Army. Those who are not eligible physically or otherwise for a commission in the M.A.C.R. will remain under the jurisdiction of Selective Service.

The pool of medical officers created under the Surgeon General of the Army will be available to supply the needs of the Navy on request from the Surgeon General of the Navy. Third and fourth year medical students may apply for commissions as Ensigns, Hospital Volunteer (Probationary), in the Naval Reserve in a manner similar to the procedure for commissions in the M.A.C.R. of the Army. Those commissioned as Ensigns, H-V (P), Naval Reserve will be under the jurisdiction of the Surgeon General of the Navy. If they do not apply for commissions as Lieutenant (junior grade) in the Medical Corps Reserve of the Navy at the time of graduation they will be automatically discharged from the Naval Reserve, whereupon they will be returned to the jurisdiction of Selective Service and be subject to induction. Those who are commissioned in the Medical Corps Reserve (Navy) are liable to call for service throughout the national emergency.

As another means of augmenting the Medical Corps of the Army and of offering inducements for young physicians to take commissions, the Surgeon General of the Army has recommended to the General Staff that promotion in the Medical Corps by selection be put into effect. If this proposal of the Surgeon General is approved, medical corps officers with special qualifications will be given rank higher than that of First Lieutenant. It is the intention to make promotions from among those who are already in the Corps but it also has been proposed that provision be made to make new appointments above the rank of First Lieutenant for those who are properly qualified. This request of the Surgeon General has not, at this writing, been approved.



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*Memorandum Regarding  
Military Services of Medical  
Students, Interns and Residents*

The following was prepared by Dr. Willard C. Rappleye, chairman, of the Committee on Preparedness of the Association of American Medical Colleges as a resumé of the report of the Committee published elsewhere in this issue of the JOURNAL.

The Association of American Medical Colleges has cooperated with National Headquarters of the Selective Service System and the Surgeons General of the Army and Navy in a plan designed to "persuade" all third and fourth year medical students who are physically and otherwise eligible to join the medical corps reserve of either the Army or the Navy. The Army is in need of more medical officers for the present forces and its Medical Corps Reserve is practically exhausted. Any further expansion of the Army will require more medical officers. The immediate needs of the Navy are less urgent but they will call for more medical officers as its forces are enlarged. The lowering of the upper age limit under the Selective Training and Service Act of 1940 as amended to 28 years has made it possible for a number of interns, hospital residents and graduate fellows to escape induction, even though they had been deferred in order to complete their training. The plan agreed upon eliminates this possibility.

The War Department has asked Selective Service to produce more medical officers for the Army and Selective Service intends to comply as fully as possible. There are two phases of the problem; the first relates to medical students and the second to interns, residents and graduate fellows.

Under the plan agreed upon the medical students of the first and second year including those students still in college who have been accepted for admission to the next first year class in an approved medical school will be under the jurisdiction of Selective Service. When a student who is a member of a college R.O.T.C. is accepted by an approved medical school he should be advised to apply three months before graduation from college for transfer to the Medical Administrative Corps Reserve or to the Naval Reserve.

The War Department has a Medical Administrative Corps Reserve and the Navy has a Naval Reserve to which third and fourth year students are eligible. Selective Service is prepared to recommend to local boards that deferment be discontinued for all third and fourth year medical students, regardless of their classification, who are eligible for a commission in either of these reserve corps. Students commissioned as Second Lieutenants in the M.A.C.R. will be under the jurisdiction of the Surgeon General of the Army and will be eligible for call to military duty for a period of five years from the date of their commission. Those commissioned as Ensigns, Hospital Volunteer (Probationary), in the Naval Reserve will be under the jurisdiction of the Surgeon General of the Navy. If they do not apply for commissions as Lieutenant (junior grade) in the Medical Corps Reserve of the Navy at the time of graduation they will be automatically discharged from the Naval Reserve, whereupon they would be returned to the jurisdiction of Selective Service and become subject to immediate call for military duty.

The reserve corps of the Army and

Navy will have a pool of potential medical officers at the time the students graduate and complete their internships. All students not eligible physically or otherwise for either the M.A.C.R. or the Naval Reserve will remain under the jurisdiction of Selective Service.

Each fourth year student who is in the M.A.C.R. should plan to apply for a commission in the Medical Corps Reserve within twelve months after graduation from medical school. Each student in the Naval Reserve should apply about three months before graduation for a commission in the Medical Corps Reserve of the Navy. It is expected that each student will be permitted to complete an internship of at least one year. If a student in the M.A.C.R. fails to apply within one year after graduation for a commission in the Medical Corps Reserve of the Army or the Navy, he will be returned to the jurisdiction of Selective Service and becomes inductable into the regular military forces. If a student in the Naval Reserve does not apply for a commission at the time of graduation he will be automatically returned to the jurisdiction of Selective Service. When a student accepts a commission in the Medical Corps reserve of the Army he is liable to call for active duty for a period of five years from the date of his Medical Corps commission (time in the M.A.C.R. is not credited to his new commission). When a student accepts a commission in the Naval Medical Reserve he is liable for call for service during the national emergency.

The Association has adopted a policy that all third and fourth year students be urged to apply for a commission in the M.A.C.R. or the Naval Reserve and that the deans of the medical schools henceforth refuse to support the request of students for further deferment under Selective Service until they have applied for a commission in either the M.A.C.R. or the Naval Reserve, if physically and otherwise eligible for such commissions. There then would be the choice of either joining one of the reserves or being subject to induction as a private.

A somewhat similar situation pertains to interns, fellows and residents. Even though they have been deferred by Selective Service in order to complete their training or to maintain the essential services they are rendering in the local communities, these individuals are not inductable when they reach June 30th following their 28th birthday. A considerable number of such young men have taken advantage of this situation and have not accepted commissions and have not carried out the implied obligation of their deferment. It is quite clear to all that the situation in the hospitals requires more prompt action because of the older age of the group and also that it is administratively more difficult because there are about 800 hospitals approved for internships and residencies. It has, therefore, been proposed by Selective Service that the deferment of all interns, residents and fellows be discontinued for those who are eligible for a commission in the Medical Corps Reserve of either the Army or the Navy.

Under the plan outlined, potential pools of future medical officers comprising fourth and third year medical students will be created under the Surgeons General of the Army and of the Navy. Pools of medical officers will also be created comprising interns, residents and graduate fellows under the same jurisdictions. In the case of the Army, each of the pools will be subdivided geographically and placed under the administration of the Corps Area Surgeons.

The Surgeon General of the Army has agreed to appoint an Advisory Committee to each of the Corps Area Surgeons comprising representatives of the medical schools, of the hospitals and of the medical profession of that area. The proposed Advisory Committees would advise the Corps Area Surgeon in calling to duty the reserve officers in such a way that their withdrawal from the hospitals and other institutions would interfere least with the services which those institutions are rendering to their local communities or that would impose as little handicap as possible in the con-

tinued training of these young men in the various specialties. As far as practicable residents in hospitals approved for graduate education will be permitted to complete preparation for their specialty. All concerned recognize that the military as well as civilian needs for specialists should be given full consideration.

The Executive Council has nominated to the Surgeon General a representative of the medical schools for the Advisory Committee to the Corps Area Surgeon in each of the nine corps areas. The American Hospital Association with the approval of the Catholic Hospital Association and the National Hospital Association, has been asked to nominate to the Surgeon General of the Army representatives to the Advisory Committee to the Corps Area Surgeons. This has been done. The American Medical Association has been asked by the Surgeon General to designate the representatives of the medical profession on these Advisory Committees.

As another means of augmenting the Medical Corps of the Army and of offering inducements for young physicians to take commissions, the Surgeon General of the Army has recommended to the General Staff that promotion in the Medical Corps by selection be put into effect. If this proposal of the Surgeon General is approved, medical corps officers with special qualifications will be given rank higher than that of First Lieutenant. It is the intention to make promotions from among those who are already in the Corps but it also has been proposed that provisions be made to make new appointments above the rank of First Lieutenant for those who are properly qualified. This request of the Surgeon General has not, at this writing been approved.

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#### *Pertinent to National Defense*

At the fifty-second annual meeting of the Association of American Medical Colleges, held in Richmond, Virginia, October 27-29, 1941, the following rec-

ommendations were made by the Executive Council to the Association at the Executive Session and Adopted:

In appreciation of the cooperation given by Brigadier General Lewis B. Hershey in charge of selective service the following resolution was adopted:

"The Association of American Medical Colleges desires to express to you and to your staff its appreciation for your cooperation in securing deferment of medical students in order that they may complete their medical education and thus become available in a continuous and uninterrupted stream prepared to meet the defense and civilian needs of the nation."

The Executive Council recommends that it be the policy of the Association of American Medical Colleges to urge third and fourth year medical students who are under the jurisdiction of Selective Service to apply for a commission as second Lieutenant in the Medical Administrative Corps Reserve of the Army or as Ensign, Hospital Volunteer (Probationary) Naval Reserve and that no further recommendations for deferment of military service be made by the member colleges of this association for junior and senior medical students who are eligible for such commissions.

In pursuance to a suggestion that in each corps area there be created by the Surgeon General of the United States Army an advisory committee to the corps area surgeon comprising representatives of the Association of American Medical Colleges, of the hospitals, and of the medical profession of that area, the executive council recommended the appointment of the following representatives from this Association:

Corps Area I—Dr. C. Sidney Burwell, Harvard Medical School, Boston, Mass.

Corps Area II—Dr. W. C. Rappleye, Columbia University, College of Physicians and Surgeons, New York City.

Corps Area III—Dr. William Pepper, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Corps Area IV—Dr. Russell H. Oppenheimer, Emory University, School of Medicine, Atlanta, Georgia.

Corp Area V—Dr. Hardy A. Kemp, Ohio State University, College of Medicine, Columbus, Ohio.

Corps Area VI—Dr. A. C. Bachmeyer, University of Chicago Medical School, Chicago, Illinois.

Corps Area VII—Dr. C. W. M. Poynter, University of Nebraska, College of Medicine, Omaha, Nebraska.

Corps Area VIII—Dr. Maurice H. Rees, University of Colorado, School of Medicine, Denver, Colorado.

Corps Area IX—Dr. L. R. Chandler, Stanford University, School of Medicine, San Francisco, California.

It is suggested that any student in Class 1-A who has been made subject to induction by his local board and whose decision is supported by the appeal board, the facts in the case be given to the committee on preparedness to be taken up with General Hershey.

In the case of premedical students it is suggested to the medical schools that they begin to accept students for 1942 now. It is the opinion of the council that an applicant accepted for admission by a medical school within the next twelve months before the opening of the next succeeding academic year should receive deferment by selective service.

The council recommends that all medical schools review their course of instruction and give sufficient emphasis to those physical and mental defects which now constitute such a large portion of the causes for rejection by the induction boards of the army. This step is in accord with the movement made by the Federal government in the direction of rehabilitation of rejected draftees.

It is also urged that adequate instruction be provided in first aid, in traumatic surgery, in industrial hygiene, in medicine, in contagious diseases, in blood plasma banks, in chemo-therapy, and in certain aspects of preventive medicine.

At the meeting of the Executive

Council held May 30, 1941, three recommendations were made. Copies of these recommendations were sent to all member colleges at that time.

1. The Executive Council recommends that those schools which can do so, without lowering standards of medical education, increase the enrolment of the 1941 entering class by 10 per cent in order to help meet the medical needs of the present national emergency.

2. The Executive Council recommends that the Association urge every medical college which can do so, without lowering standards of medical education, to continue the required medical training of the fourth year during the summer of 1941 in order to graduate at an earlier date as many students as possible.

3. The Executive Council recommends that the Association make a study of the need for and possibility of revising the schedule of instruction in medical colleges with a view to accelerating the output of graduates during the national emergency without any lowering of standards of medical education.

These recommendations were extended to include the year 1942 and all medical schools were encouraged to accelerate the medical course provided that this can be done without lowering standards.

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#### *Paul S. McKibben*

November 11, 1941, Paul S. McKibben, dean School of Medicine and professor and head of the department of anatomy, University of Southern California, died following a gastrectomy done to remove a malignant ulcer of the pyloric portion of the stomach. Dr. McKibben had long been identified with medical education at the University of Michigan and as dean at the University of Western Ontario Faculty of Medicine, London, Canada. From London Dr. McKibben went to Los Angeles as professor of anatomy and later was appointed dean.

### *Medical Curriculum and National Defense*

The Subcommittee on Medical Education of the Health and Medical Committee (Drs. Burwell, Rappleye, Chandler, Diehl, Musser) calls to the attention of the deans and faculties of medical colleges the following recommendations dealing with special courses in the undergraduate curriculum to which serious consideration should be given:

#### I. RECOMMENDATIONS CONCERNING UNDERGRADUATE TEACHING:

A. *Curriculum.* That no change be made in the curricula of medical schools as now established.

B. *Content of Courses.* That subjects of military importance be stressed within the content of courses already existing. Specific recommendations under this head are:

1. *Psychiatry.* More emphasis should be placed on the study of normal personality. This material is related to the content of present courses in psychobiology. The standardization of psychiatric concepts throughout the country is important to the military services.
2. *Public Health.* Emphasis should be placed upon epidemiology and sanitation.
3. *Aviation Medicine.* No special course in this subject is recommended. Existing courses in physiology, internal medicine, and ophthalmology should stress such subjects as anoxemia, the physiology of high altitudes, perception of depth, ocular muscle balance, etc.
4. *Dermatology.* The Army and Navy Medical Services have found in newly appointed officers inadequate knowledge of common skin diseases.
5. *Venereal Disease.* The treatment recommended for venereal disease in the Services should be

included in courses on this subject.

6. *Surgery.* Teaching in surgery should include instruction in the standardized methods adopted by the Services for the care of fractures.

7. *Internal Medicine.* Special emphasis should be placed on the technique of physical examination for the services, including particularly expert instruction in the condition of the teeth and special senses.

#### C. General

1. It is recommended that a short course of orientation lectures be established in the medical schools, covering the organization of the Army and Navy Medical Corps, and the Public Health Service, their administration, customs, and courtesies. The R.O.T.C. Manual for medical officers can be used as background material. These lectures can be given by staff members in medical schools who have had military experience either in active service or as reserve officers. No active medical officers can be made available for this purpose. It is estimated that the important ground can be covered in from 4 to 8 hours of lecture. It is believed that this course should be made voluntary and be open to both undergraduate students and hospital staff.
2. It is recommended that teachers in medical schools have available the various general and special manuals in use by the Services for the guidance of medical officers, such as the Army's "Manual of Splints and Appliances," and the recent circular letter on venereal diseases. It is recommended that a reference shelf be established in medical school libraries to contain these and all other effective



manuals and the journal "War Medicine." Many of the publications which should be included in such a collection can be obtained from the Government Printing Office or the National Headquarters of Selective Service.

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#### *Teach Preventive Medicine*

Dr. Hugh Leavell, professor and head of the department of public health in the University of Louisville School of Medicine and Director of the City of Louisville Department of Health, makes an interesting contribution to current discussion of the teaching of preventive medicine to undergraduate medical students. He is in a favorable position to observe the benefits to both health department and medical school which are derived from effective collaboration and the methods by which it may be accomplished. The report on his studies, which is a summary of a larger report, is published by the Commonwealth Fund. Dr. Leavell's experience at Yale School of Public Health, which he attended on a Commonwealth Fund fellowship, gave him good opportunities to review the experience of medical schools and public health departments which are collaborating in the teaching of preventive medicine.

The information secured by means of questionnaires sent to medical colleges and health departments is presented in some detail and should be read carefully as it gives the answer to many problems which have beset medical school administrators in connection with the teaching of public health and preventive medicine.

Dr. Leavell's conclusions are very much to the point. He says, "Teaching should not be directed toward fitting the student for a public health career." "Some aspects of preventive medicine should be discussed in each of the four years." "The history and development of the public health movement . . . are important to the student and have a definite place in his cultural background." "The effect of the environ-

ment on the individual, physically, mentally and morally, should be discussed and the students should learn what may be done to influence these environmental effects through community sanitation and other similar measures." "Clinical facilities (Health departments; other official and nonofficial agencies, social agencies, etc.) available in the community should be used to assist in the instruction of students . . ." "The idea of teaching all possible subjects in the medical school from the preventive angle should be stressed constantly . . ." The teaching program may best be carried out by a full time department which operates on a university basis, with an adequate budget and carries on investigation and research." "The teaching of preventive medicine is of such importance that it should not be neglected even in medical schools giving only a two year course."

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#### *Medical Colleges Prepare to Accelerate Medical Education*

The following memorandum, approved by the Executive Council of the Association of American Medical Colleges, was released to the press December 16th. This action of the Executive Council authorizes member colleges to put this accelerated program into effect at once so that students will receive ample notice. The Council is of the opinion that it will be a good plan for every college to do this if it can.

"The entrance of the United States into active participation in the world war may increase the number of men called into military and naval service. Should more men be called to arms, it will necessitate an increase in the number of doctors needed for the services. The Association of American Medical Colleges has been aware of this contingency and the steps necessary to meet it. When war was actually declared the Executive Council of the Association of American Medical Colleges was, therefore, prepared to pass a resolution stating that medical colleges are ready



to begin an accelerated program of medical education. This announcement was made by Dr. Loren H. Chandler, dean, Stanford University School of Medicine and president of the Association.

"In considering this question the Association is aware of the importance of maintaining the present high standard of education existing in the medical colleges of the Association. Important as it is in peace time to have capable doctors, it is even more important in war that doctors be thoroughly prepared to assume their responsibility for the care of the men who are fighting for the defense of their country.

"The plan recommended by the Executive Council to the medical colleges of the Association is to eliminate the long summer vacation period. In this way medical schools will operate on the basis of four full quarters per year instead of the usual three quarters. This arrangement will graduate classes in three calendar years from the time of beginning their education. The advantage of the proposed plan is that it will not unduly tax the faculty or facilities of medical colleges and, therefore, will not lower the standard of education. Where feasible, entering classes can be started July 1st instead of the middle of late September.

"The medical colleges of the Association have already taken one step toward increasing the number of available doctors. This was done through increasing by about 10 per cent the enrolment of their first year class entering this fall. This step alone will provide an additional 500 doctors. The accelerated program of education would provide an

additional class of 5,500. It will be possible also to hasten the preparation of those students now in medical school by eliminating their summer vacations.

"The Association has a Committee on Preparedness, which has been in constant contact with the Army and Navy officials in Washington. Dr. Willard C. Rappleye, dean of the Colleges of Physicians and Surgeons of Columbia University, is chairman of this committee. He will communicate the action of the Executive Council of the Association to these officials. Final details of the proposed plan will be worked out at the next meeting of the Executive Council and communicated to the medical schools holding membership in the Association."

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#### *Recommendation of Health and Medical Committee*

At a meeting held December 10th, the Health and Medical Committee approved the following recommendation submitted by its Subcommittee on Medical Education:

"It is recommended that medical schools which can do so without sacrificing the quality or standards of medical training, be requested to increase the number of students accepted for the entering class by an average of approximately 10 per cent and, if possible, to accelerate the rate of graduation."

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#### *Lyman L. Daines*

We regret to announce the sudden death on December 14th of Dr. Daines, dean of the University of Utah School of Medicine, from coronary thrombosis. This was a second attack.

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## College News

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### *Cornell University Medical College*

Dr. Walter L. Niles has been appointed acting dean to serve during a year's leave of absence granted Dr. Wm. S. Ladd for reasons of health. Dr. Niles was dean from 1919 to 1928. He is a past president of the Association of American Medical Colleges.

An appropriation of \$600,000 from the Rockefeller Foundation, for the endowment of the Department of Public Health and Preventive Medicine, was the principal item in the list of contributions received by the College during the 1940-41 academic year.

In addition the College received gifts totalling \$251,079.85 to be used for research and educational purposes. This was more than 30 per cent higher than the average amount received during the years 1935-40, and more than three times the amount received during 1930-35.

The fund from the Rockefeller Foundation capitalized an annual grant which the Department of Public Health and Preventive Medicine had received from the Foundation during the past four years. The endowment will strengthen the present program of the department, headed by Dr. Wilson G. Smillie, and make possible an expansion of its teaching facilities.

With a first year class of 83, the present enrollment of 310 students is the largest in the history of the College. Members of the entering class represent 37 different colleges and universities and come from 15 states.

At the opening exercises on September 16, the five John A. Heim Scholarships were awarded for the first time. Forty years ago Dr. Heim received financial aid which enabled him to take his medical degree in 1905. He practiced in New York, specializing in X-ray work. When he died two years ago his will provided for the five scholarships.

The Heim awards are the only ones given by the college covering the full cost of tuition, laboratory fees and books.

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### *Harvard Medical School*

Appointments to the teaching and research staff: Dr. Norbert A. Wilhelm, superintendent of the Peter Bent Brigham Hospital, Boston, lecturer on public health practice; Dr. William V. Knoll, pathologist of the Robert B. Green Memorial Hospital, San Antonio, Texas, as Lucius N. Littauer fellow in pathology at the Collis P. Huntington Memorial Hospital, Boston, and Dr. Edward J. Welch, Milton, assistant medical adviser.

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### *Baylor University College of Medicine*

One of the most unique, as well as most modern, medical libraries in the country, has just been completed and was formally dedicated November 24, 1941. The fireproof structure, costing \$65,000.00, was built by funds provided by medical students and doctors.

For ten years the Junior class in medicine each December has staged a "home talent" Medical Follies. Seven years ago Dr. W. W. Looney, professor of anatomy, conceived the idea that the proceeds of the annual Follies might be the nucleus for a new library building. The Baylor Medical Alumni Association enthusiastically sponsored the plan. With the alumni backing, the Follies grew from a show in a borrowed grammar school auditorium with box office receipts of a few hundred dollars, to a splendid spectacle, last December playing to 3,300 spectators in the huge Fair Park Auditorium, with total proceeds of approximately \$10,000. The usual box office returns are swelled by donations from alumni and friends.

The new structure, called the Alumni and Faculty Medical Library of Baylor University, is of Texas white stone, and faces Gaston Avenue. Beneath the front windows are five sculptured motifs of the different phases of medicine. The main reading room has the most modern neon indirect lighting effects obtainable. Behind the commodious metal stacks are five carrels or private reading cubicles. In the building are two beautifully appointed private reading or conference rooms for doctors only.

The edifice, which measures 77 by 66 feet in size, has a capacity of 80,000 volumes. The grounds have been attractively landscaped.

The medical alumni dedicated the handsome library to the professor of anatomy, Dr. W. W. Looney, whose perseverance and unflagging enthusiasm made possible the completion of the project. A bronze plaque in the foyer carries the dedication to Dr. Looney.

The actual business details of building and raising funds were in the hands of the so-called "The Baylor Medical Alumni Library Association, Inc.," whose directors were elected by the alumni. Officers of the Library Association are Dr. Frank Carman, president; Dr. Everett C. Fox, vice president and Dr. W. W. Looney, secretary-treasurer.

The building and completion of the new library marks the beginning of an era of expansion of Baylor into a greater medical center for the Southwest. The enthusiasm and interest of the alumni, faculty members and the entire medical profession of Dallas has been stirred to the point that far-reaching movements are under way for other needed buildings and endowment. The actively working group of alumni and other faculty members, plan another building project right away, because the new library is paid for. On the day of the dedication, a check for \$500 and another for \$1,000 came in to start the "next" structure.—MILFORD O. ROUSE, M.D., President of Dallas Baylor Medical Alumni Association.

### *Long Island College of Medicine*

Promotions: Dr. Fred L. Moore, professor of preventive medicine and community health, succeeding Dr. Alfred E. Shipley; Dr. Ralph M. Beach, professor of clinical obstetrics and gynecology, succeeding Dr. O. Paul Humpstone; Dr. Louis C. Johnson, clinical professor of medicine; Drs. Milton B. Handelsman, Milton B. Plotz, Charles G. Williamson and Burton L. Zohman, assistant clinical professors of medicine; Drs. William H. Field and David Dexter Davis, assistant clinical professors of surgery.

A meeting of the Research Society of the Long Island College of Medicine was held November 12, 1941. The program included:

"The Obturator-Epigastric or Epigastric-Obturator Arterial Loop; Implications," by Ralph Blumberg, Department of Anatomy. "Leptospirosis in New York City," by E. J. Tiffany, Department of Bacteriology; Nancy F. Martorano, Bureau of Laboratories, Dept. of Health, N. Y. C.; and Elliston Farrell, Department of Medicine. "Reactive Hyperemia in Human Skin; Seasonal, Segmental and Age Variations," by J. R. DiPalma and F. I. Foster, Department of Physiology, and the Department of Medicine, Kings County Hospital.

A Symposium on Military Medicine was held at the College, December 3, 1941. The speakers included: Rear Admiral Charles M. Oman, M.C., U. S. Navy, Commanding Officer, U. S. Naval Medical Center, who spoke on "Medical Tactics as Applied to Naval Warfare." Captain Paul M. Albright, M.C., U. S. Navy, spoke on the "Eyes of the Navy." Dr. Philip D. Wilson, Surgeon-in-Chief, Hospital for the Ruptured and Crippled, New York City, discussed "Fractures in Modern War." Captain D. S. Pepper, M.C., U. S. Army, spoke on "The Medical Student and the Military Service." Commander Page O. Northington, Flight Surgeon, U. S. Navy, talked about "Aviation Medicine."

*University of California  
Medical School*

Under the direction of Dr. Frederick C. Cordes, clinical professor of ophthalmology, and Dr. James F. Rinehart, associate professor of pathology, Dr. Michael J. Hogan, clinical instructor in ophthalmology, the ophthalmology and pathology research laboratory has started.

Dr. Cecil K. Drinker, professor of physiology and Dean of the School of Public Health at Harvard University, spoke at a medical staff conference in October. Dr. Benjamin Kramer, professor of clinical pediatrics at the Long Island College of Medicine and Pediatrician-in-Chief of the Brooklyn Jewish Hospital, was a recent visitor to the Division of Pediatrics, participating in the weekly staff conference of the Division.

The Twelfth Annual Postgraduate Symposium on Heart Disease of the San Francisco Heart Committee, affiliated with the American Heart Association and the California Heart Association, was held in San Francisco from October 30 to November 1, 1941. Dr. Paul D. White, lecturer on medicine, Harvard Medical School, was the guest speaker. Several sessions were held at the University of California Hospital, with members of the Faculty giving lectures and clinics.

Dr. Karl F. Meyer, professor of bacteriology, gave the Craig Lecture at the annual meeting of the American Society of Tropical Medicine in St. Louis, Missouri, on November 10, 1941.

Professor E. Braun-Menendez of the Physiological Institute, University of Buenos Aires, Buenos Aires, Argentina, is to be the 1942 Herzstein Lecturer. He will speak on March 9, 11 and 13, on "Experimental Renal Hypertension." The Morris Herzstein Lectures were established in 1929, under a provision of the will of the late Dr. Morris Herzstein of San Francisco. The talks are given on alternate years under the auspices of Stanford University School of Medicine and the University of California Medical School.

Dr. Le Roy C. Abbott, professor of orthopedic surgery, Dr. Karl F. Meyer, professor of bacteriology and director of the Hooper Foundation, and Dr. William D. Hammon, assistant professor of epidemiology on the Hooper staff, were present at the meeting of the National Foundation for Infantile Paralysis held in New York City early in December. Dr. Meyer gave the De Lamar Lectures at Johns Hopkins University.

In December, Dr. Hans Lisser, clinical professor of medicine, gave a talk on "Clinical Indications for and Modes of Administering Testosterone Compounds in the Male" at the Eighth Annual Post-Graduate Assembly of the Alumni Association of the College of Medical Evangelists in Los Angeles.

The Le Roy Crummer Room, which is the medical history library of the Medical School, has an exhibition on the history of obstetrics. The Library is also showing a collection of lithographs of early English hospitals and English medical cartoons of the eighteenth and nineteenth centuries.

Dr. Howard Morrow, clinical professor of dermatology, who had been ill for some time, passed away in San Francisco on October 22, 1941. Until two or three years ago, when ill health forced him to give up the post, he was Chairman of the Division of Dermatology in the Medical School.

From January 5 to 7, 1942, the Medical School will offer a Postgraduate Session for Doctors of Medicine on "Clinical Aspects of New Therapy." This will be a short comprehensive course, designed to meet the needs of physicians engaged in private practice.

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*University of Virginia  
Department of Medicine*

The newly formed Virginia Branch of the Society of American Bacteriologists met in Charlottesville on Saturday, November 1st. Papers covering a wide range of subjects including milk, water, and shellfish bacteriology, medical bacteriology and mycology were presented at morning and afternoon sessions.

At the recent meeting of the American Public Health Association held in Atlantic City, a report of the work of the Committee on Whooping Cough was presented by Dr. George McL. Lawson, professor of preventive medicine and bacteriology of the University of Virginia. This committee is designed to evaluate public health administrative practices in the control of whooping cough and to act as a correlating agency for research in this field in North America.

October 20th Dr. Claude E. Forkner of the Cornell University Medical School delivered the second annual Phi Beta Pi Medical Fraternity lecture. He spoke on the subject of "The Diagnosis and Treatment of the Leukemias."

The Neuropsychiatric Society of Virginia held its October meeting in the University of Virginia Hospital, on the 22nd. Appearing on the program were Dr. William Gayle Crutchfield, University, Va., who spoke on the "Neurosurgical Clinic;" Dr. David C. Wilson, University, Va., whose subject was "Treatment of Various Personality Reactions by Electro-Shock;" Dr. Henry B. Mulholland, University, Va., who spoke on "The Latest Developments in our Knowledge of Vitamins, with an especial consideration of their relationship to the Central Nervous System;" Dr. Walter Freeman, Washington, D. C., who conducted a Clinical-Pathological Conference.

On November 14th Dr. Chester M. Jones, clinical professor of medicine, Harvard University, delivered an address before the Virginia Alpha Chapter of Alpha Omega Alpha. He spoke on "The Influence of the Nervous System on Digestive Tract Symptoms."

During the meetings of the Southern Medical Association in St. Louis, November 10th to 13th, Dr. David E. Wilson gave the Chairman's Address in the Section on Neurology and Psychiatry, speaking on the subject "The Psychiatrist Looks at War;" Dr. Edwin P. Lehman took part in a panel discussion on the "Diagnosis of Gastro-Intestinal Diseases;" Dr. Dudley C. Smith

presented a paper before the Section on Dermatology and Syphilology on "The Treatment of Vincent's Infection with Fuadin"; Dr. Oscar Swineford spoke on "Cottonseed Sensitivity" before the Section on Allergy; Dr. Charles J. Frankel presented a paper before the Section on Bone and Joint Surgery on "The Palliative Treatment of Irreducible Congenital Dislocation of the Hip."

Lehigh University conferred the honorary degree of Doctor of Science on Dr. Harvey E. Jordan at Convocation on October 3, 1941.

The School of Surgery and Gynecology has received a grant of \$2,000 from the John and Mary R. Markle Foundation, for support of further investigations on heparin in relation to peritoneal adhesions and other tissue reactions, under the direction of Dr. Edwin P. Lehman and Dr. Floyd Boys.

Dr. Brock Dear—'08, of Washington, Connecticut, recently retired from active practice in Bronxville, New York, has made a gift of his large collection of obstetrical instruments to the Department of Obstetrics and Gynecology. Dr. Dear, during his student days at the University of Virginia, was befriended by the late Dr. Joseph Bryan of Richmond, Virginia, and he has made his gift in grateful remembrance of Dr. Bryan.

A bequest of \$13,432 has been received from Mr. William E. Hopkins, the income from which is to be used for the purchase of medical books and medical journals for the library and medical school.

The Eighth Annual Postgraduate Course in Ophthalmology and Otolaryngology was given at the Medical School, December 2nd to 5th. Lectures were given by Dr. Frank B. Walsh, associate professor of ophthalmology, Johns Hopkins University; Dr. Derrick Vail, professor of ophthalmology, University of Cincinnati; Dr. Algernon B. Reese, attending surgeon, Institute of Ophthalmology, New York City; Dr. Edward A. Looper, professor of diseases of the nose and throat, University of Maryland; Dr. Eugene Landis,



professor of medicine, University of Virginia; Dr. E. P. Lehman, professor of surgery, University of Virginia; Dr. Louis H. Clerf, professor of laryngology and broncho-esophagology, Jefferson Medical College; Dr. Karl M. Houser, professor of otolaryngology, University of Pennsylvania; Dr. H. B. Mulholland, professor of practice of medicine, University of Virginia; Dr. J. Edwin Wood, professor of practice of medicine; Dr. W. H. Pearson, orthodontist to the University of Virginia Hospital.

November 25th Dr. Hugh Hampton Young, director of the Brady Urological Clinic, Johns Hopkins University Hospital, delivered an address before the Pi Mu Chapter of Phi Chi. He spoke on "The Problems in Prostatic Surgery" and "Some Hermaphrodites I Have Met and Operations Carried Out to Make Them Happy."

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*University of Toronto  
Faculty of Medicine*

Dr. Charles H. Best, professor and head of the department of physiology, and director of the Banting-Best Department of Medical Research, has been appointed honorary lieutenant-commander of the Royal Canadian Navy.

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*University of Michigan  
Medical School*

Henry F. Vaughan, Dr.P.H., professor of public health, has been appointed dean of the new School of Public Health at the university and chairman of the department of public health practice. Under the new setup, Drs. Thomas Francis Jr., and Lowell T. Coggshall of the Rockefeller Foundation, New York, will be professor and chairman of the department of epidemiology and professor of epidemiology, respectively. Dr. John Sundwall, former professor and director of the division of hygiene and public health, has been named professor of hygiene and public health. Other transfers into the new unit include: Nathan Sinai, Dr.P.H., professor of public health; Dr. Emory

W. Sink, assistant professor of public health; Kenneth A. Easlick, D.D.S., assistant professor of public health dentistry; Marguerite F. Hall, Ph.D., assistant professor of biometrics; Lloyd R. Gates, Dr.P.H., instructor in public health engineering; Dr. Lavinia G. MacKaye, instructor in child health; Dr. David A. VanderSlice, instructor in school health.

The new School of Public Health has been made possible by two gifts of \$500,000 each by the W. K. Kellogg Foundation and the Rockefeller Foundation. Half the total will be applied to the cost of the site, building and equipment and the other half to maintenance over a ten year period.

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*University of Vermont  
College of Medicine*

Dr. C. H. Beecher, professor of medicine, has been appointed dean, succeeding Dr. Hardy A. Kemp, now dean of the Ohio State University College of Medicine.

Dr. Ray G. Daggs, acting head of the department of physiology of the medical college, has received one of the 17 special commissions as Major in the Sanitary Corps, food and nutrition subdivision, of the Medical Corps. Major Daggs, on leave of absence from the university, has been ordered to report on Nov. 13, at the Walter Reed Hospital in Washington where he expects to be stationed for a month before being transferred to a Corps area headquarters where he will be in charge of the nutrition of men stationed in the various camps in that corps area.

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*Yale University  
School of Medicine*

A scholarship fund has been established in memory of Reuben H. Donnelley, Yale, 1889, former vice-president of R. R. Donnelley and Sons Company of Chicago.

Each year, beginning in 1941-42, a student selected on the basis of scholastic

standing and financial need will receive an award of from \$1,000 to \$1,500 from the fund. Although grants will thus be made for a single year only, they may be renewed for succeeding years to any individual recipient; or distributed to a larger number of students at the discretion of the faculty. The recipients of such awards will be chosen primarily because of their character, their capacity for leadership in the profession they plan to enter, and their promise of future usefulness.

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*University of Oregon  
Medical School*

Dean Richard B. Dillehunt is making a good recovery from a long illness. The associate dean, Dr. W. E. Baird is carrying on during Dr. Dillehunt's illness.

The new \$360,000 library building and auditorium was dedicated recently. A gift of \$100,000 of Dr. John E. Weeks was matched by the Rockefeller Foundation and PWA.

The second postgraduate session of diseases of the chest was held December 11, 12 and 13 on the medical school campus in Portland under auspices of the school in cooperation with the Pacific Northwest section of the American College of Chest Physicians.

Dr. Adolph Weinzirl, former Portland city health officer, is serving his first semester as head of the department of public health and preventive medicine. He recently made an inspection trip of eastern medical schools and social hygiene centers.

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*University of Rochester  
School of Medicine*

Dr. George Packer Berry has been appointed Assistant Dean of the Medical School for a three-year period, terminating June 30, 1944. The appointment was necessitated by the growing volume

of administrative detail arising from the national defense program. He will act for the School in such matters as emergency medical service, reserve commissions for medical students and staff members in the Army and Navy and deal with questions submitted by draft boards.

Dr. Basil C. MacLean, director of the Strong Memorial Hospital, has been granted a leave of absence in order to take a graduate course in public health at the School of Hygiene and Public Health, Johns Hopkins University. Under a special arrangement with the University and the School of Hygiene, Dr. MacLean will spend two days each week at Strong Memorial Hospital. During his absence Dr. Albert W. Snoko will attend to his duties.

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*Meharry Medical College*

Dr. John W. Jones, professor of pediatrics, has resigned. Dr. Edward C. Lee has received a fellowship in physiology at Harvard. Dr. W. S. Quinland spent three months at the University of Chicago in pathology as a General Education Board Fellow. Dr. Michael J. Bent, professor of bacteriology and assistant dean, spent three months at the University of Minnesota under Dr. Gaylord W. Anderson as a General Education Board Fellow. He spent most of his time in public health and preventive medicine.

Dr. Haven Emerson of the De Lamar Institute of Public Health, Columbia University, delivered five lectures at Meharry recently. His subjects were public health, preventive medicine, alcohol, diabetes and diphtheria.

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*University of Manitoba  
Faculty of Medicine*

Frank W. Horner, Ltd., has donated \$500 for research. Dean A. T. Mathers has been elected president of the Royal College of Physicians and Surgeons.

*Queen's University  
Faculty of Medicine*

Dr. Henry E. Sigerist, professor of the history of medicine, Johns Hopkins University, was guest speaker at the celebration of the 100th anniversary of the foundation of the university. His subject was "One Hundred Years of Medicine." The honorary degree of Doctor of Laws was conferred on Dr. Sigerist.

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*University of the Philippines  
College of Medicine*

Dr. Daniel de la Paz, professor and head of the department of pharmacology, has been appointed assistant dean. Dr. de la Paz is also secretary of the college.

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*University of Buffalo  
School of Medicine*

Dr. William T. Clark, associate professor of hygiene and public health, has been appointed professor and head of the department of hygiene and public health to succeed the late Dr. Walter S. Goodale. Dr. Clark has also been appointed superintendent of the Edward J. Meyer Memorial Hospital, a city institution. This position was also held by Dr. Goodale at the time of his death.

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*University of Cincinnati  
College of Medicine*

Mrs. Margaret S. Rockhill, editor of the *Woman's Medical Journal*, who died June 6, 1941, left a trust fund to the College to finance a fellowship in memory of her late husband, Dr. Charles S. Rockhill.

The fellowship will be for students specializing in diseases of the chest. After twenty years the trust, which provides for several other gifts, will be closed and the entire estate will go to the university. An estimate of \$35,000 was placed on the estate.

*Columbia University  
College of Physicians and Surgeons*

Appointments: Drs. David Ulmar, assistant clinical professor of medicine, and Gerald H. Pratt, assistant clinical professor of surgery, in the New York Postgraduate Medical School and Hospital.

Drs. Frederick A. Mettler, associate professor of anatomy, and Alson E. Braley, assistant professor of ophthalmology in the College of Physicians and Surgeons.

Drs. Myron E. Wegman, assistant professor of child hygiene, and Oscar G. Costa Mandry, assistant professor of tropical medicine in the School of Tropical Medicine of the University of Puerto Rico under the auspices of Columbia in San Juan, P. R.

Dr. Allen O. Whipple, Valentine Mott professor of surgery, was presented with the Bigelow Medal by Dr. David Cheever, Boston, on behalf of the Boston Surgical Society at a special meeting in Boston, November 7, for his contributions to the advancement of surgery.

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*Marquette University  
School of Medicine*

Dr. Francis D. Murphy, clinical professor and director of the department of medicine, has been named to a full professorship in medicine. The professorship has been endowed by an anonymous donor. Dr. Murphy graduated at Marquette in 1921. He has been clinical director of the Milwaukee County Hospital since 1924 and head of the department of medicine at Marquette since 1928.

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*The George Washington University  
School of Medicine*

Under date of October 1, 1941 the Faculty of the School of Medicine voted to require three years, or ninety semester hours, of college work for entrance, effective September, 1942.

*University of Chicago  
Medical School*

Fred C. Koch, Ph.D., Frank P. Hixon distinguished service professor and chairman of the department of biochemistry of the University of Chicago, retired October 1 with the title emeritus, having reached the retirement age of 65. Dr. Koch received his Ph.D. degree at Chicago in 1912 and in the same year became instructor of physiologic chemistry there. He subsequently served as associate professor, professor of biochemistry and chairman of the department.

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*Creighton University  
School of Medicine*

Extensive changes have been made in the curriculum of the senior and sophomore years. The amount of didactic work has been reduced and the amount of clinical work has been increased in the senior year. A two and one-half weeks course in surgical pathology has been introduced in which signs and symptoms are related to pathology. A weekly clinicopathological conference is held throughout the year. Ten lectures are given on anesthesia. Dr. Richard Egan has been appointed director of the teaching services in the Creighton Memorial St. Joseph's Hospital. All student activities are under his direction. One third of the class spends three months on duty in the Outpatient department every morning. This group is also on Out Call and Home Obstetric Service. One afternoon each week the members of the departments of physiology, biochemistry and pharmacology with small groups of students studying cases in the light of altered physiology and chemistry and an attempt is made to point out the physiological and biochemical basis of the signs and symptoms of disease and the basic rationale of treatment.

In the sophomore year the changes made consist of "pushing back" certain fundamental courses in medicine, surgery and obstetrics from the junior year.

Dr. Victor E. Levine, professor of biochemistry, has returned from Alaska

where he studied the vitamin content of the diet of the Eskimo. Dr. Edward M. Scott has been appointed instructor in chemistry, succeeding Dr. Ira Jorgensen who is now doing chemistry for the U. S. Army. Dr. C. H. Arnold has been added to the staff in surgery. He will lecture on anesthesia. Dr. Wm. A. Stotler will take charge of the course in neuroanatomy, succeeding Dr. Jeff Minckler who is gone to the St. Louis University School of Medicine.

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*Loyola University  
School of Medicine*

Dr. Julius Sendroy, Jr., of the Department of Experimental Medicine, has accepted an assignment of a defense problem under the National Defense Committee.

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*University of Maryland  
School of Medicine*

A series of lectures on the history of medicine is announced. The speaker is Dr. Louis A. M. Krause. His special subject: "The History of Scourges."

The lectures, eleven in number, began in November and were continued in December. The dates for 1942 are: February 3, 10, 17, 24; March, 3, 10. Students and the general public are invited to attend.

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*McGill University  
Faculty of Medicine*

The Rockefeller Foundation has granted \$25,000 for research in endocrinology for five years under the direction of Dr. John S. L. Browne, assistant professor of medicine and pathologic chemistry.

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*University of Texas  
School of Medicine*

Dr. Carl A. Nau, formerly director of the Texas division of industrial hygiene, is now professor of physiology and preventive medicine and head of the department. Dr. Nau graduated at Rush Medical College, Chicago, in 1935.

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## General News

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### *University of Michigan School of Public Health*

As early as August, 1939, the Board of Regents had authorized the establishment of a School of Public Health at the University of Michigan. In July, 1941, the responsibilities of the Division of Hygiene and Public Health were officially transferred to the School of Public Health, in accordance with By-laws adopted by the Regents. It is provided that the School, "shall be maintained for professional education and training of personnel for public health work and administration in the several fields of public health; for the dissemination of knowledge of hygiene, public health and preventive medicine through general and special courses in the schools and colleges of the University requesting such courses, and also through extramural instruction; and for the advancement of knowledge of hygiene, public health and preventive medicine through investigation and research."

The former Faculty of the Division constituted the initial Faculty of the School of Public Health. The Executive Committee, which is charged with the duties of investigating and formulating educational and instructional policies for consideration by the Faculty, consists of the Dean, who serves as Chairman, Nathan Sinai, Dr.P.H., Secretary of the Faculty, John Sundwall, Ph.D., M.D., Thomas Francis, Jr., Sc.D., M.D., and Charles F. McKhann, M.D.

Several new members have been added to the Faculty, including Dr. Thomas Francis, Jr., formerly Professor of Bacteriology at New York University, and for many years with the Rockefeller Institute, Dr. Lowell T. Coggeshall, of the International Health Division of the Rockefeller Institute, whose principal interest is in tropical diseases, Dr. Harold E. Pearson, who, after preliminary training in California,

has spent two years in the study of virus diseases at Harvard, Dr. Richard J. Porter, formerly of the University of Chicago, who is working with Dr. Coggeshall on the chemotherapy of malaria, Dr. Gerald M. Ridenour, formerly a teacher at Rutgers University, who is associated with Mr. Harry E. Miller in teaching Environmental Health, Dr. Kenneth A. Easlick, Assistant Professor of Public Health Dentistry, and Dr. Charles F. McKhann, who is Professor of Pediatrics and Chairman of the Department of Pediatrics in the Medical School, and also Professor of Child Health in the School of Public Health. To the resident Faculty have been added several other competent associates and assistants, as well as technicians; and to the list of nonresident lecturers have been added the names of distinguished representatives of health organizations, industrial health services, the State Health Department, and so forth.

The School now offers the degree of Master of Public Health for graduates in medicine, dentistry, engineering, and those who have the bachelor's degree in public health nursing. This degree is also offered to approved graduates of accepted undergraduate schools, who have had satisfactory backgrounds in the natural, physical, and social sciences. To obtain the Master's degree, one must spend at least one full academic year in residence. Forty-eight hours of credit are required, including a minimum of 12 hours credit for acceptable field work, carried on under the supervision of the Faculty. Credit may be given for field work taken prior to, concurrent with or subsequent to the academic work. It is anticipated that the degree of Master of Public Health will become indicative of training which will assure competency in the actual field of public health.

For the degree of Doctor of Public Health, candidates must (1) be gradu-



ates of an approved medical school and (2) have completed courses leading to the degree of Master of Public Health, or its equivalent. Upon the approval of the Executive Committee, others who have an exceptional basic training may be permitted to become candidates for the doctorate.

The two graduate degrees have been transferred from the Rackham School of Graduate Studies to the School of Public Health. Likewise, the certificate for public health nurses and the bachelor's degree in public health nursing have been transferred from the School of Education to the School of Public Health.

The School is divided into three major departments: (1) Public Health Practice, including public health administration, health education, public health economics, public health dentistry, public health nursing, physiologic hygiene, mental health and nutrition; (2) Epidemiology, including public health laboratory practice and public health statistics; and (3) Environmental Health, including public health engineering and industrial health.

The scope of teaching in the field of epidemiology is being broadened, especially in the fields of virology and tropical diseases.

Plans have been completed for a building for the exclusive use of the School of Public Health, to be located on a hilltop, overlooking the Huron valley, immediately to the south of the University Hospital group. The new building will contain the teaching facilities for the various departments, a laboratory for virology, a laboratory for parasitic diseases and public health laboratory practice, an industrial health laboratory and a public health engineering laboratory, and accommodations for postgraduate work and continued education. The program of continued education will be outlined in future issues of this newsletter.

The new building, and the teaching and research programs, are receiving, in addition to the funds appropriated by

the University, assistance from the W. K. Kellogg Foundation, the Rockefeller Foundation, the National Foundation for Infantile Paralysis, the United States Public Health Service, and the War Department.

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#### *Association of Schools of Public Health*

This association was formed recently. Its membership includes the schools of Michigan, Columbia, Yale, Harvard, Johns Hopkins, North Carolina and Toronto. The officers of the association are: President, Lowell J. Reed, Johns Hopkins; vice president, Milton J. Rosenau, North Carolina; secretary, Henry F. Vaughan, Michigan.

The annual meeting of the association was held December 20, 1941, in New York City.

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#### *University of Illinois Graduate School*

The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of medicine and dentistry in Chicago at a stipend of \$1,200 per year (calendar year with one month's vacation). Fellows are eligible for re-appointment in competition with the new applicants.

Candidates for these fellowships must have completed a training of not less than eight years beyond high school graduation. This training may have been acquired in any one of the following ways, or the equivalent thereof:

1. Work leading to the B.S. and M.D. degrees (In some instances the candidates would have the M.S. degree, or an additional year or two of hospital training beyond the intern year).
2. Work leading to the B.S., M.S. and D.D.S. degrees.
3. Work leading to the B.S. or B.A. degree in a four year collegiate course and to the D.D.S. degree.
4. Work leading to the B.S., D.D.S. and M.D. degrees.

Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former science teachers as references. The fellowship year begins September 1.

Formal application blanks may be secured from the Secretary of the Committee on Graduate Work in Medicine and Dentistry, 1853 W. Polk Street, Chicago, Illinois.

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#### *Interns from Latin America*

Thirty-seven interns representing fifteen nations of South, Central and Caribbean America recently arrived in the United States to spend a year in United States hospitals and medical schools. The interns have received fellowships for study in this country through the cooperation of the Office of the Coordinator of Inter-American Affairs, the Pan American Sanitary Bureau and the participating institutions.

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#### *Fellowships in Nutrition*

Effective November 1, 1941, Swift & Company will make available a limited number of fellowships to universities and medical schools, for research in nutrition.

To be eligible for grants, projects should be aimed at one of the following objectives:

1. The development of fundamental information on the nutritive properties of foods.

2. The application of this fundamental information on the nutritive properties of foods to the improvement of the American diet and health.

The fellowships provide for special research to be undertaken in laboratories of universities and medical schools with funds which the company has set aside as grants in aid, beginning November 1. The fellowships will be for one year but may be renewed where the project warrants it.

Any fundamental study of the nutritive properties of foods or the application of such information to improvement of the American diet and health will be eligible for consideration for a grant.

Swift & Company is naturally interested in nutrition research on meat and meat products, but grants will not be strictly limited to work in these fields. Any worthwhile study on the nutritive properties of foods or the improvement of diets will be eligible for a grant.

Placement of the Fellowships in Nutrition will be coordinated by Dr. R. C. Newton and his staff of the Research Laboratories of Swift & Company, Union Stock Yards, Chicago.

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#### *Air Hygiene Foundation Changes Name*

The Board of Trustees of Air Hygiene Foundation of America, Inc., announce the change of the name of the organization to Industrial Hygiene Foundation of America, Inc.

When the foundation was organized, emphasis was placed on silicosis, No. 1 industrial health problem at that time. With the rapid advances of industrial hygiene and the multiplication of new occupational health problems, the work of the foundation has steadily broadened.

A study is now under way, with the collaboration of the U. S. Public Health Service, to help reduce sick absenteeism, which is costing the heavy industries alone about one billion man-hours yearly. Other accomplishments include continuing studies of X-ray techinics for large-scale physical examinations in industry; studies of the control of toxic fumes and gases, including proper precautions in welding; a research, now in progress, to develop further practical data on exhaust ventilation for employee health protection; investigations in "protector" dusts, including aluminum, to combat dust diseases.

The foundation's sixth annual meeting was held at Mellon Institute, Pitts-

burgh, on November 12 and 13. The program revolves around the theme: *Defend the Defense Worker!*

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*Pasteur Lecture  
Chicago Institute of Medicine*

At a meeting of the Institute of Medicine held in Chicago, November 28, 1941, Dr. George H. Whipple, dean and Professor of Pathology, University of Rochester School of Medicine, delivered the sixteenth Pasteur Lecture. His subject was, "The Production, Utilization and Interrelation of Blood Proteins — Hemoglobin and Plasma Proteins."

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*Josiah Macy, Jr., Foundation*

Dr. Willard C. Rappleye, dean and professor of economics, Columbia University College of Physicians and Surgeons, a past president and now a member of the Executive Council of the Association of American Medical Colleges, will assume the presidency of the Foundation January 1, 1942, succeeding the late Dr. Ludwig Kast who died in August, 1941. Dr. Rappleye is also Commissioner of Hospitals for New York City, president of the Advisory Council on Medical Education and of the Advisory Board for Medical Specialties, and chairman of the Committee on Internships and the Committee on Preparedness of the Association of American Medical Colleges.

The Foundation was founded in 1930 by Mrs. Kate Macy Ladd in memory of her father. During the past four years income and transfers amounted to \$1,079,144; cash disbursements amounted to \$951,512.61. Of the total amount disbursed, 17 per cent was in support of studies in medical education; 20 per cent for studies of growth, development,

maturation and ageing; 22 per cent for study of psychosomatic disorders; 12 per cent for social research concerning health and sickness and 29 per cent for medical research in various fields.

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*Mary Putnam Jacobi  
Fellowship*

The Women's Medical Association of New York offers a Mary Putnam Jacobi Fellowship for medical research, of \$1,000, available October first, 1942. It is open to any woman doctor, either American or foreign, who is a graduate of a reputable medical school.

Applications for this fellowship must be filed with the secretary of the committee by March first, 1942, and must be accompanied by statements by persons other than the candidate as to (1) health, (2) educational qualifications, and (3) previous work. The applicant herself should state the problem she proposes to investigate and send her photograph. Applicants should send with their applications sufficient data to enable the committee to judge of their respective merits.

The recipient of the fellowship will be expected to give full time to the study of her problem and to make a report for publication at the completion of her research.

Application blanks may be obtained from the secretary of the committee, Dr. Phebe L. DuBois, 150 East 73rd St., New York City.

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*Carnegie Corporation*

Dr. Walter A. Jessup, president of the Carnegie Foundation for the Advancement of Teaching since 1934, became president of the Carnegie Corporation, November 1, 1941, succeeding Dr. Frederick P. Keppel who retired after nineteen years of service.

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## Book News

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### *The Autonomic Nervous System*

Anatomy, Physiology and Surgical Application. By James C. White, M.D., Assistant Professor of Surgery, and Reginald H. Smithwick, M.D., Instructor in Surgery, Harvard Medical School. 2nd Ed. The Macmillan Company, New York. 1942. Price, \$6.75.

This book, more than one-half rewritten and its length increased by one-third, presents the latest knowledge of the structure and function of the autonomic nervous system and reports the surgical methods by which its disorders can be relieved. The student of neurology will find it very helpful. He will find, gathered into one volume, the fundamental contributions of the anatomist, the physiologist, the pharmacologist, the internist and the surgeon.

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### *Symptoms in Diagnosis*

By Jonathan C. Meakins, M.D., Professor of Medicine, McGill University. Little Brown and Company, Boston. 1941. Price, \$4.

"Sift the evidence as presented by symptoms to an ultimate conclusion." Words used by the author in his preface, adequately describe the purpose of this excellent book. Symptoms are the patient's way of telling his story. They are of more importance than physical signs or laboratory findings. On this note, the author proceeds. Under five chapter headings he discusses (1) physical characteristics of the body; (2) skin; (3) disturbances of sensation; (4) symptoms of localizing value; (5) symptoms having reference to general function. This is a book no student can do without. The publishers share in the work is most commendable.

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### *Functional Pathology*

By Leopold Lichtwitz, M.D., Clinical Professor of Medicine, Columbia University. New York, Grune & Stratton. 1941. Price, \$8.75.

The medical viewpoint dominates this book. The author discusses the autonomic nervous system and the endocrine glands, the regulating action of the nervous system, especially the pathology of the hypothalamus, also endocrinology, the mechanism of the action of the hormones and the response of the effector organs to hormones. There is integration of bedside observation and laboratory experience with thorough consideration of the human elements involved.

### *Infant Nutrition*

By Williams McKim Marriott, M.D., Late Professor of Pediatrics, Washington University School of Medicine, Revised by P. C. Jeans, M.D., Professor of Pediatrics, State University of Iowa College of Medicine, 3rd Ed. The C. V. Mosby Company, St. Louis. 1941. Price, \$5.50.

Students will find here, brought together in a small volume, all the facts and ideas that have a practical bearing on infant nutrition and presented in such a way as to be useful. Both normal and pathological conditions are covered, concisely but clearly. It is stressed that since fundamental facts concerning nutritional requirements of infants are now fairly well established, the most that any type of feeding can accomplish is to fulfill these requirements.

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### *Nutritional Deficiencies*

Diagnosis and Treatment. By John B. Youmans, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine. Assisted by E. White Patton, M.D. J. B. Lippincott Company, Philadelphia. 1941. Price, \$5.

This book brings together in a critical fashion such information as is necessary and helpful for a proper understanding and management of nutritional deficiencies. Although the vitamins occupy a large part of the book, other essential food factors, whose deficiency leads to recognizable signs and symptoms, are included. Deficiencies of calories and water (starvation: dehydration) are not included. In the discussion of treatment, prevention is stressed by placing it before curative treatment. Details of laboratory tests are given in an appendix.

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### *Diseases of Women*

By Henry S. Crossen, M.D., Professor Emeritus of Clinical Gynecology, and Robert J. Crossen, M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine. 9th Ed. St. Louis. The C. V. Mosby Company. 1941. Price, \$12.50.

This book is too well known to demand comment. Any textbook which has survived for thirty-five years must have won a place for itself as a teaching aid. There must be a reason for its popularity.

*Occupational Diseases*

**Diagnosis, Medicolegal Aspects and Treatment.** By Rutherford T. Johnstone, M.D. Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles, California. W. B. Saunders Company, Philadelphia. 1941. Price, \$7.50.

The fundamental aim of this book is to outline a basis for the diagnosis and treatment of the more common occupational diseases, to interpret the medicolegal phase and to offer from experience the expected disability. Special attention is given to an interpretation of industrial medicine. Treatment is discussed in detail. The first three chapters deal with the purpose, administration (and methods of evaluating disability) and the function of the physician as related to workman's compensation. The remaining chapters (36) deal with gases, solvents and fumes, metals, dusts and the medical side of industrial medicine.

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*Shock Treatment in Psychiatry*

By Lucie Jessner, M.D., Resident Psychiatrist, Balldate, Georgetown, Mass., and V. Gerard Ryan, M.D., Assistant in Psychiatry Harvard Medical School. Grune and Stratton, New York. 1941. Price, \$3.50.

A comprehensive survey of three modern methods of shock treatment: insulin, metrazol, electric current. Very practical.

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*Synopsis of Genitourinary Diseases*

By Austin I. Dodson, M.D., Professor of Genitourinary Diseases, Medical College of Virginia. The C. V. Mosby Company, St. Louis, 1941. 3rd Ed. Price, \$3.50.

These books present essential facts, hence are admirable for review. Their size makes possible carrying them in the pocket for quick reference which students will appreciate. It is good to have something handy to jog memory.

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*The Toxemias of Pregnancy*

By William J. Dieckmann, M.D., Associate Professor of Obstetrics and Gynecology, University of Chicago. The C. V. Mosby Company, St. Louis. 1941. Price, \$7.50.

The praise given the author by Dr. Fred L. Adair in his "Foreword" is merited. He has assembled and correlated pertinent data to which he has personally contributed. Since the book will have greatest value for the specialist and the general practitioner, stress is laid on the physiology and pathology of pregnancy—which the author says is almost a virgin field. That thought also accounts for the extended bibliography appended to several chapters.

*Immunology*

By Noble Pierce Sherwood, M.D., Professor of Bacteriology, University of Kansas. 2nd Ed. The C. V. Mosby Company, St. Louis. 1941. Price, \$6.50.

Revision, rearrangement, deletions and additions bring this work up-to-date. Two new chapters, one on the reticuloendothelial system and one on serum reactions have been added. The chapter on colloids has been placed in the appendix. It may be questioned whether the bibliography appended to the chapters is not too extensive for a textbook. It has great value for the researcher but not for the student. Incidentally, omission of a large part of the bibliography would diminish the size of the book, although it is not excessive.

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*Prevention of Deformity in Childhood*

By Richard B. Raney, M.D., Associate in Orthopedic Surgery, Duke University School of Medicine, in collaboration with Alfred R. Shands, Jr., M.D., Medical Director, Alfred I. duPont Institute of the Nemours Foundation. National Society for Crippled Children, Elyria, Ohio. 1941. Price, \$1.

Medical social service workers, teachers of crippled children, parents of crippled children, members of boards of hospitals for crippled children, non-medical hospital superintendents, members of county, state, or national societies for the crippled, and even the vast majority of physicians in general practice of medicine will welcome this book by Doctor Raney because they can read it and understand what he is talking about. The numerous illustrations portray graphically in artists' drawings each crippling condition. These are more effective than photographs, and infinitely more illuminating for the lay reader than would be x-ray prints.

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*Diagnostic Roentgenology*

Ross Golden, M.D., Editor; Professor of Radiology, Columbia University College of Physicians and Surgeons; Director of Roentgenology, Presbyterian Hospital, New York. Vol. 1. Thomas Nelson & Sons, New York. 1941.

These renewal pages comprise more than 600 pages. The volume includes the roentgen ray diagnosis of diseases of the skull and intracranial contents; radiology of the chest. Part II, Differential diagnosis of certain roentgen shadows. Five new chapters are included: The roentgen diagnosis of fractures and dislocations; roentgen diagnosis in infants and children; soft tissue roentgenology; laminography; angiography. There is also new material on the use of the roentgen ray in obstetrics.



*Gynecology and Female Endocrinology*

By Emil Novak, M.D., Associate in Gynecology, Johns Hopkins University School of Medicine. Little, Brown and Company, Boston, 1941. Price, \$10.

It is refreshing to meet a new concept of gynecology. The author stresses the fact that only a small proportion of gynecological patients need surgical treatment. Gynecology is now an endocrine problem, in the main. The biological aspects of gynecology have assumed vast proportions and importance chiefly because of the developments in reproductive physiology and endocrinology. In other words, female endocrinology is regarded by the author as an integral and important part of gynecology. In the interests of students, operative details have been omitted. The student is carried to the point of operation—its indications, scope and purpose being discussed but descriptions of technic are not given. The illustrations are numerous but exceedingly well done and purposeful.

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*Measurement of Adult Intelligence*

By David Wechsler, M.D., Assistant Clinical Professor of Medical Psychology, New York University College of Medicine. 2nd Ed. The Williams & Wilkins Company, Baltimore. 1941. Price, \$3.50.

The new second edition retains all the valuable characteristics of the original publication. In particular, the Wechsler-Bellevue Scale replaces children's tests that are still the main, though incongruous, instruments for measuring adult intelligence; it covers a wide sphere of intellectual abilities—performance as well as verbal; it is standardized over the age range of 7 to 70 years on a selection typical of occupational and educational distribution at every age; it is more consistently reliable than any other scale when evaluated against clinical data.

It goes beyond the first edition by the inclusion of a new chapter on the clinical features and diagnostic applications of the scale.

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*Diseases of the Nervous System*

By F. M. R. Walshe, M.D., Physician in Charge of the Neurological Department, University College Hospital, London. 2nd Ed. The Williams & Wilkins Company, Baltimore. 1941. Price, \$4.50.

A fine book for the student. The subject is presented in two sections. The first presents a general statement of the principles of neurological diagnosis with summary descriptions of the characteristic symptom complexes of diseases of the nervous system. In the second are given accounts of the commoner nervous diseases. Rare affections are omitted purposely.

*Housing for Health*

Papers Presented Under the Auspices of the Committee on the Hygiene of Housing of the American Public Health Association. The Science Press Printing Co. Lancaster, Pennsylvania. 1941. Price, \$1.

This volume contains contributions dealing with housing codes, housing surveys and slum clearance, particularly from the standpoint of the health officer; with health facilities in housing projects; with problems of recreation and use of living space; with heating, lighting and noise control and with medical and social impacts of good and bad housing. The "Basic Principles of Healthful Housing" prepared by the Committee is reprinted as an appendix. The book should help fill the gap in housing literature between the uncritical output of housing propagandists on the one hand, and the technical reports of highly specialized research agencies on the other. The address from which copies of the book may be obtained is 310 Cedar Street, New Haven, Connecticut.

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*Synopsis of Allergy*

By Harry L. Alexander, M.D., Professor of Clinical Medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis. 1941. Price, \$3.

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